TELEPHONE ENGINEER & MANAGEMENT

the telephone industry magazine

OCTOBER 1, 1960
Price 50c

DETROIT PUBLIC LIBRARY
OCT 5 1960
TECHNOLOGY DEPARTMENT
Vol. 64 #19

Featuring A Preview of USITA's 63rd Annual Convention

October 9-12
Conrad Hilton Hotel — Chicago

CHECK THESE FEATURES

USITA Convention Data 42
USITA Officers 42
Committee Chairmen 44
Subcommittee Directors 44
Pioneer Meeting 46
Convention Program 48
Convention Exhibitors 50

Plus These Features

- ★ COMMERCIAL NOTES
- ★ INDUSTRY OBSERVATIONS
- ★ NEW PRODUCTS' SHOWCASE
- ★ PLANT ENGINEERING NOTES
- ★ SUB-HARMONICS & OVERTONES
- ★ TRAFFIC LIGHTS
- ★ WASHINGTON OBSERVATIONS

Let our "Revenue Men" show you THE NEW POTENTIALS OF DIRECTORY REVENUE

Take a man like

Murray Perkins...

Murray is one of our "Revenue Men" in Fresno, California.

Devoted to his work and to the welfare of his community, he is one of our representatives who help telephone companies increase their revenue through directory sales.

Murray first served as a salesman for General Telephone Directory from 1944 to 1947, and then rejoined the company in 1955. He was promoted to Sales Supervisor of the Fresno, California unit in 1957.

He, his wife and their two children now make their home in Fresno. Extremely active in Church affairs, Murray spends a great deal of time organizing, conducting and teaching Sunday school — working on welfare projects — supervising youth groups — and doing public speaking.

You'd like Murray Perkins. He's typical of the "Revenue Men" who work for General Telephone Directory Company — and for you. They're an asset to any community.

Are you keeping pace with the trend of increased directory revenue? The potential is enormous. You can't afford *not* to keep pace.

The revenue you earn from a well-sold, well-published directory can give you the highest net profit of any service you sell. Little or no expense is charged against it. And directory profits can make a hefty contribution to total net earnings.

Our "Revenue Men" are trained to help you exploit the rich potential of directory revenue. Backed by our Complete Directory Service Plan, they work with market-tested procedures to tap every source of revenue: local, regional and national.

May we show you a plan tailored to fit your needs? No obligation, of course. Just call or write.

GENERAL TELEPHONE DIRECTORY COMPANY

1800 Oakton Boulevard
Des Plaines, Illinois
VAnderbilt 7-6111

DIVISION OFFICES:

Bloomington, Illinois • Columbia, Mo. • Durham, N. C. • Erie, Pa.
Fort Wayne, Ind. • Honolulu, H. I. • Lexington, Ky. • Long Beach, Calif.
Madison, Wis. • Manila, P. I. • Muskegon, Mich. • St. Paul, Minn.
San Angelo, Tex. • San Francisco, Calif. • Spokane, Wash. • Tampa, Fla.

TELEPHONE ENGINEER & MANAGEMENT

Published on the 1st and 15th of each month by

TELEPHONE ENGINEER PUBLISHING CORP.
7720 Sheridan Road, Chicago 26, Ill.

Telephone
ROgers Park 4-3040
Chicago

EDITORIAL STAFF

ROY F. SMITH
Publisher

JOHN G. REYNOLDS
Editor

DICK REYNOLDS
Production Mgr.

JANE KELLEY
Editorial Assistant

JOHN S. REED
Technical Editor

ROLAND DAVIES & FRED HENCK
Washington Editors

Contributing Editors
BILL CORMAN
C. D. EHINGER
L. A. GRITTEN
G. M. JONES
D. A. PERIGO
LEO SANDS
ALLAN R. STACEY

ADVERTISING STAFF

DONALD C. SORENSEN
Advertising Manager

RAY GERACI
Promotion Manager

BETSY MEYERS
Advertising Assistant

KEITH H. EVANS & ASSOCIATES
3723 Wilshire Blvd.
Los Angeles 5, Calif.
Tel. — DUnkirk 8-2981
515 Market St., Rm. 225,
San Francisco 5, Calif.
Tel. — YUkon 2-4280

BUSINESS STAFF

ROY F. SMITH
President

DONALD C. SORENSEN
Executive Vice President

JOHN G. REYNOLDS
Vice President

BETTY SCHROEDER
Corporate Secretary

PAT LAWHORN
Circulation Manager

BPA

Member of
Business Publications
Audit of Circulation, Inc.

TELEPHONE ENGINEER & MANAGEMENT

the telephone industry magazine

VOL. 64 NO. 19 OCT. 1, 1960

CONTENTS

ASSOCIATIONS

USITA Plans "Best-Yet" Convention — John G. Reynolds — 42
Chairmen & Directors of USITA Committees — 44
Dr. Nicholas Nyaradi To Address Pioneer Meeting — 46
USITA Convention Program — 48
USITA Convention Exhibitors — 50
An Invitation from USITA President Foster B. McHenry — 51
Get Your Money's Worth From Meetings — T. D. Talmage — 52
Telephone Conventions and the Little Company — L. A. Gritten — 54

COMMERCIAL DEPARTMENT

Rate Packaging Methods For Pushbutton Service — Allan R. Stacey — 62

INSURANCE

Your Insurance Program — C. D. Ehinger — 64

FINANCIAL

Communications Securities — 109

MOBILE TELEPHONE SERVICE

Oregon Company Installs Mobile System — James W. Damon — 56

NEWS & COMMENT

Industry Observations — L. A. Gritten — 78
Washington Observations — Roland Davies & Fred Henck — 82
Industry News Briefs — 113
The Back of the Book — John G. Reynolds — 146

PRODUCTS & SERVICES

New Products' Showcase — Dick Reynolds — 90
Telephone Market Place (Classified Advertising) — 140
Advertisers' Index — 145

TRAFFIC DEPARTMENT

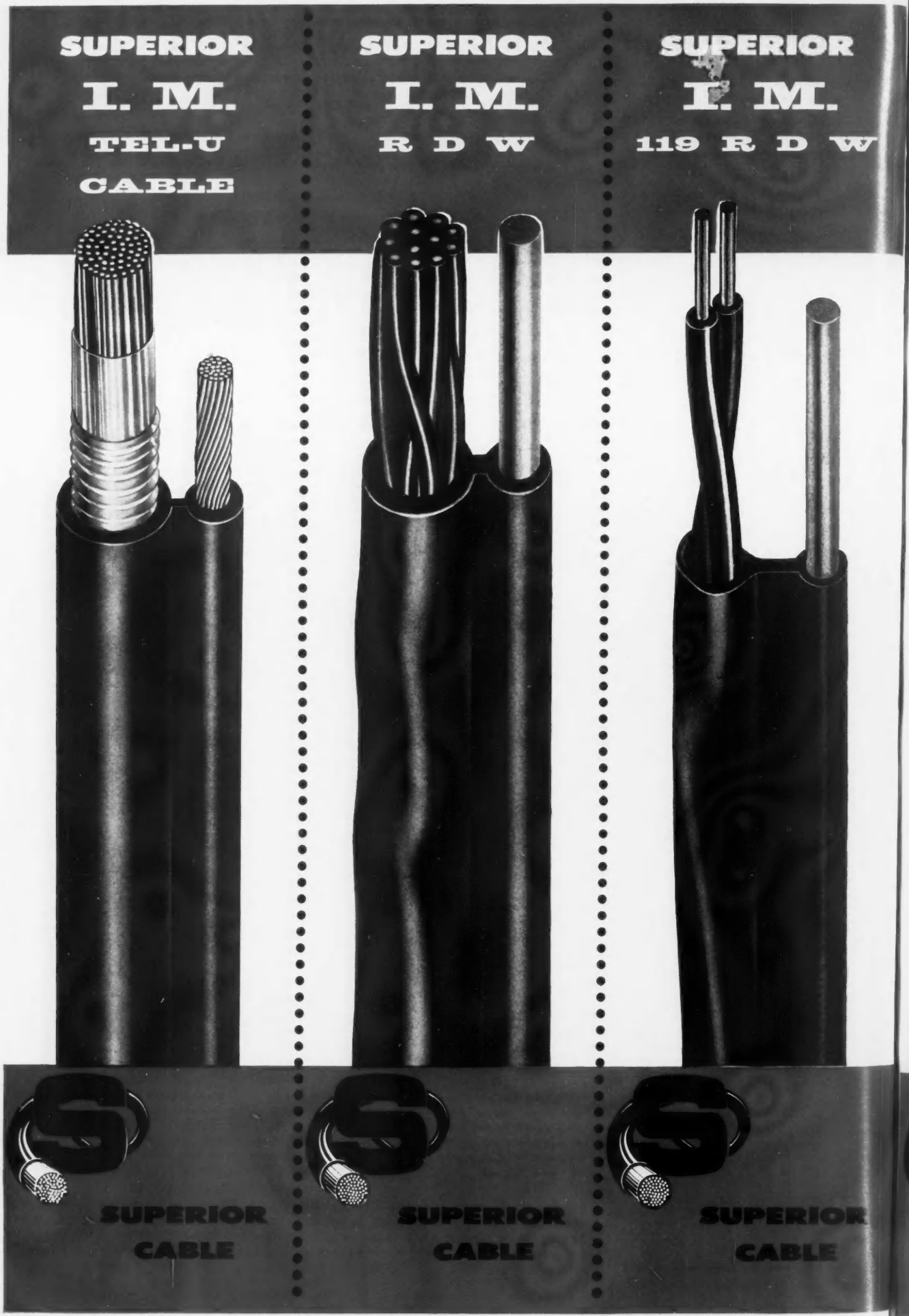
Is "Positive Line Identification" The Cure? — D. A. Perigo — 68

THE TE&M FRONT COVER

"Over the lines-into our hearts" was the theme of the recent tribute paid to Misses Edith (top photo right) and Daisy Jefferson (top photo right) in recognition of their retirement after a continuous service of 52 years at the Urich, Mo., exchange of the United Tel. Co. of Missouri. Top photo shows Miss Edith and Miss Daisy at the switchboard which was replaced by dial system. Bottom photo shows Misses Daisy and Edith Jefferson inspecting the new system.

Volume 64, No. 19. Published on the 1st and 15th of each month by TELEPHONE ENGINEER PUBLISHING CORP., 7720 Sheridan Rd., Chicago 26, Ill. Subscriptions, U. S. and Possessions, $4.0 per year; Canada, $4.50; in all other countries, $6.50. Single Copies, U. S. A., 50 cents. Entered as Second Class matter at the post office at Rochelle, Ill. under the act of March 3, 1879. Copyright 1960 by Telephone Engineer Publishing Corp., 7720 N. Sheridan Rd., Chicago 26, Ill.

POSTMASTER . . . Please send form 3579 to TELEPHONE ENGINEER & MANAGEMENT, 7720 N. Sheridan Rd., Chicago 26, Ill.


SUPERIOR
I. M.
TEL-U
CABLE
SUPERIOR
I. M.
R D W
SUPERIOR
I. M.
119 R D W
SUPERIOR
CABLE
SUPERIOR
CABLE
SUPERIOR
CABLE

SUPERIOR
I. M.
2-22 DROP

SUPERIOR
I. M.
FAMILY

"I.M." products are members of Superior's supported family of wires and cables, in which the supporting messenger is an integrated part of the jacketed product.

Cable products, exchange, low capacitance, or composite may integrate (a wide range of) messengers, all of which are standard in the industry, and none of which require special hardware.

The Rural Distribution Wire also incorporates an integrated messenger plus an all-weather core. Color coding is accomplished by use of an exclusive, permanent inlaid colored stripe. The one pair I.M.-RD product is recommended for use in place of "C" Rural and long drop wire extensions.

The I.M. Supported Drop Wire is recommended for its use of copper conductors for better conductivity, its physical ruggedness, and its high strength supporting messenger (525 lbs.) which also can be used as a supplementary ground without the additional expense required when other type drop wires are used.

YOU'RE INVITED

to see all SUPERIOR WIRES and CABLES

•

VISIT US during the convention

We'll be waiting to see you in Rooms 653-655 at Chicago's **CONRAD HILTON HOTEL**

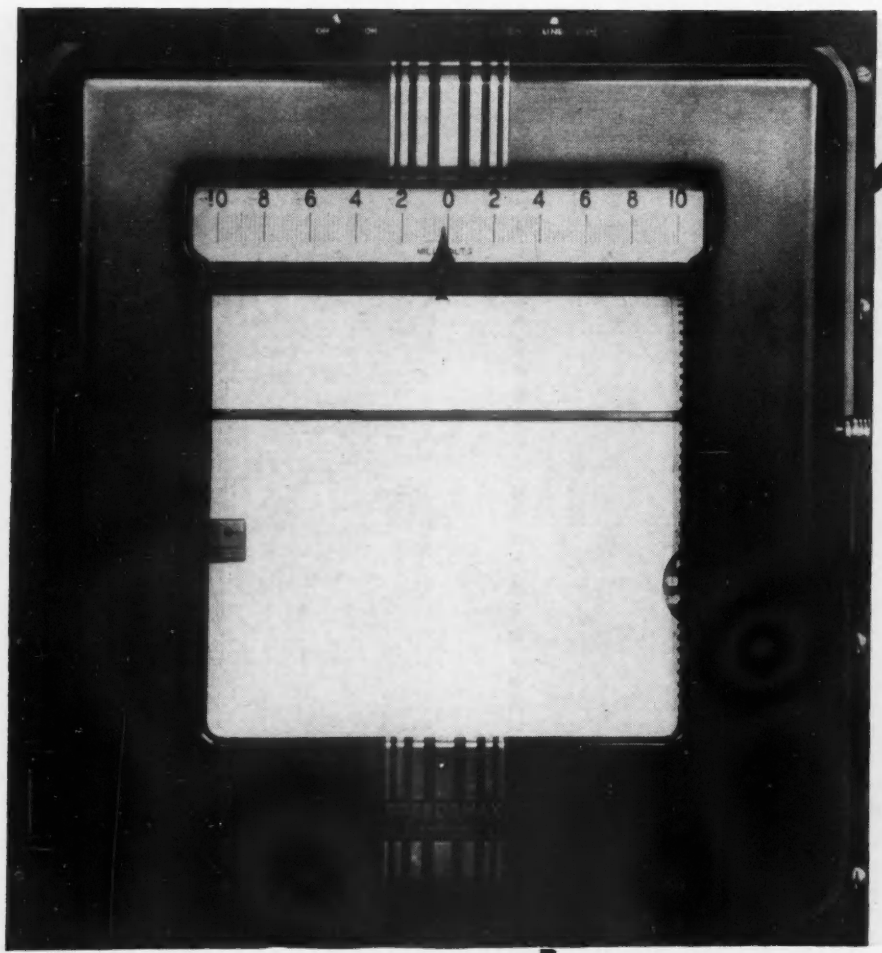
SUPERIOR CABLE

SUPERIOR CABLE

SUPERIOR CABLE CORPORATION
Hickory, N. C.

100% AUTOMATIC

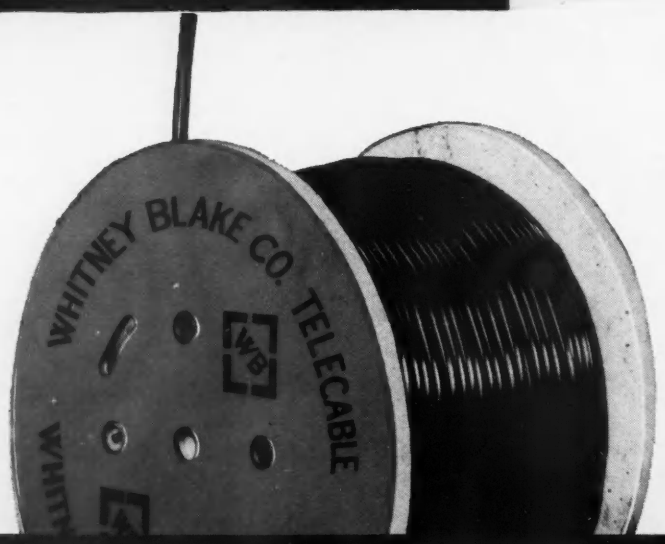
ASSURES *that all conductors in every length of Whitney Blake Telecable® leave the factory free from . . .*



- **OPENS**
- **GROUNDS**
- **CROSSES**
- **SHORT CIRCUITS**

All data including the resistance of each conductor is permanently recorded on strip charts.

Only the TELETESTER provides this complete inspection.

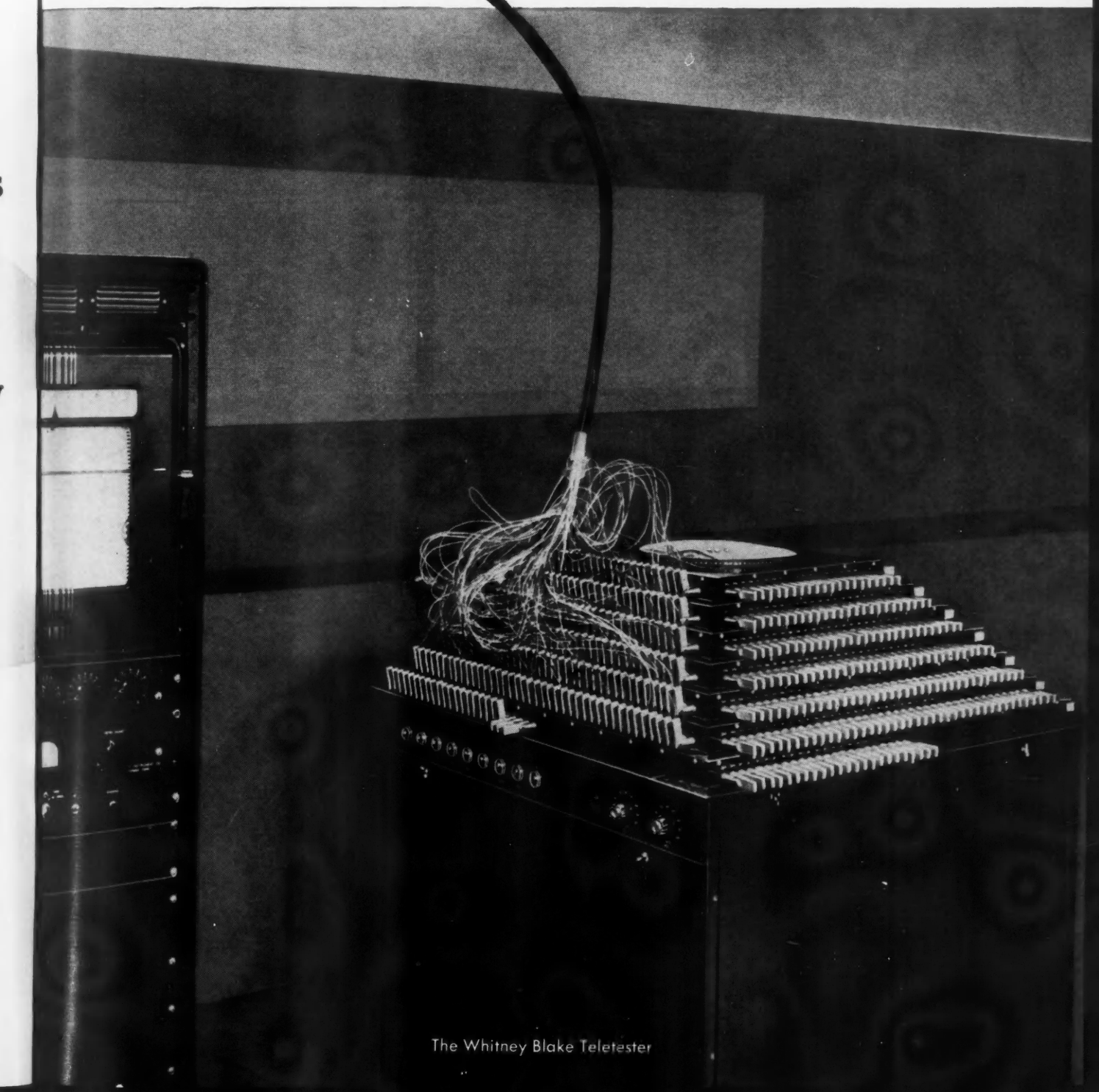


TESTING

WHITNEY BLAKE CO.

NEW HAVEN 14, CONNECTICUT
Telephone: CHestnut 8-5515 TWX: NH 84

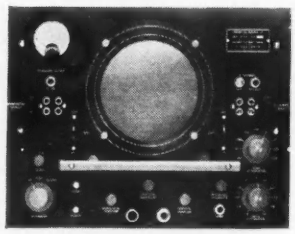
RELIABILITY — A PRODUCT OF THE ADVANCED TESTING TECHNIQUE AT WHITNEY BLAKE.



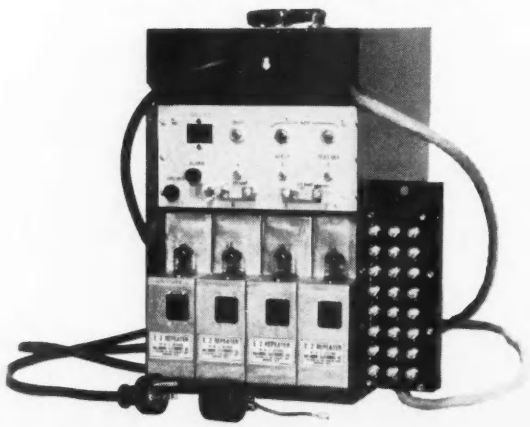
The Whitney Blake Teletester

We are proud to announce the appointment of International Teletronics Inc. as exclusive distributor for Hallamore to the Independent Telephone Industry. We consider this an important step ahead in our efforts to serve you with better transmission equipment, testing systems, and services. Hallamore Electronics Division of the Siegler Corp. 714 N. Brookhurst Ave., Anaheim, California. Phone PR 4-1010 DDD AREA 714

SEE LIVE DEMONSTRATION AT USITA CONVENTION



TMS 0100, Transmission Measuring Instrument. E-2 and E-3 Repeaters. VF Tone Signalling Control Systems. E-Repeater Test Equipment. E-Repeater Power Supply. Artificial Lines. Complete Facilities for Repair and Rehabilitation of Telephone Instruments, including application of HALLAPLAST colors in bright new decorator shades more durable than the original finish. Portable "Plug-In" E-Repeater Package . . . Completely Self-contained.



Improving Transmission by Advanced Electronic Techniques

HALLAMORE

INTERNATIONAL TELETRONICS INC.

Serving the Communications Industries of the World

Exclusive Distributors of . . . . PANHANDLE **TRANSISTORIZED CARRIER**

"Carrier means Panhandle"

- EXCHANGE TRUNK CARRIER
- SUBSCRIBER CARRIER
- TRUNK CARRIER
- URBAN SUBSCRIBER CARRIER
- MULTIPLEX

For use on cable, open or buried wire or microwave

Announce A New Exclusive Associate

Hallamore Electronics Division

Transmission Equipment

- VOICE FREQUENCY REPEATERS
- TRANSMISSION MEASURING INSTRUMENTS
- PORTABLE REPEATER EQUIPMENT
- V F TONE SIGNALING CONTROL SYSTEM
- ARTIFICIAL LINE EQUIPMENT
- E-REPEATER TEST SETS
- E-REPEATER POWER SUPPLIES

THE SIEGLER CORPORATION

THE PERSONNEL OF INTERNATIONAL TELETRONICS INC. As Exclusive Distributors of both PANHANDLE and HALLAMORE are ready to assist and provide for the transmission requirement of the communication industries.

Write or Phone for Complete Details

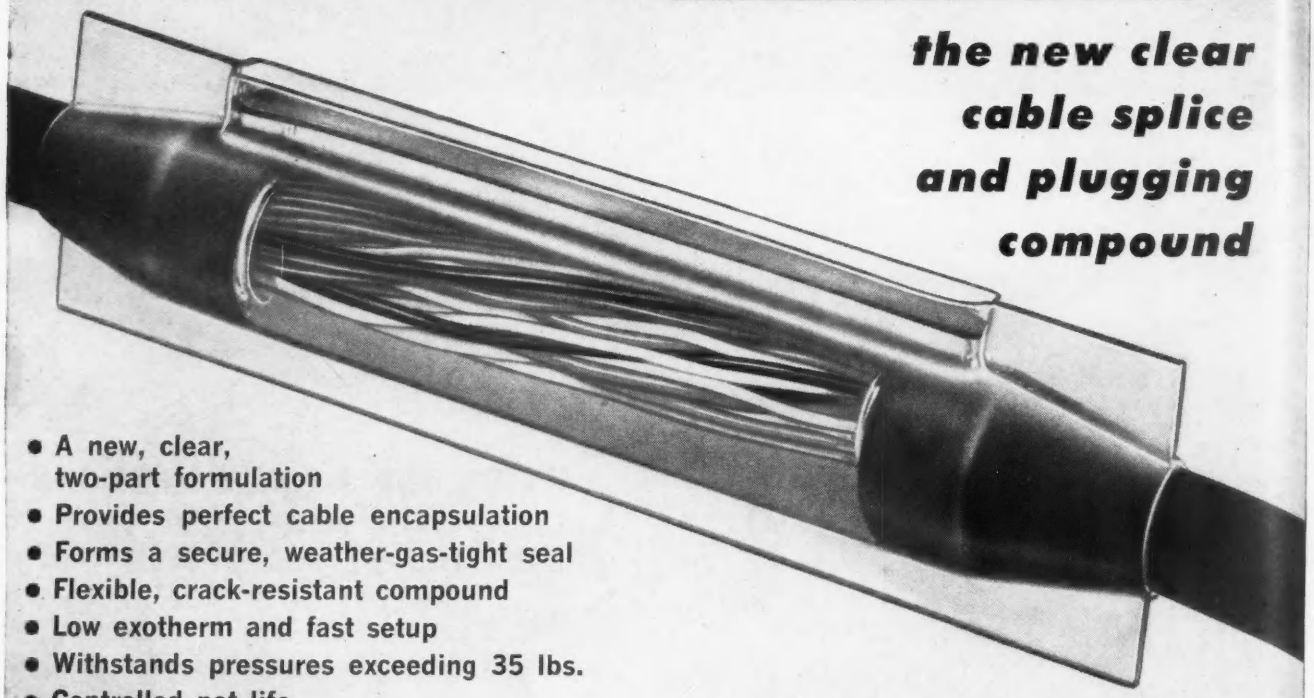
INTERNATIONAL TELETRONICS, INC.

644 BRANIFF AIRWAYS BUILDING • DALLAS, TEXAS • PHONE FLEETWOOD 7-8353

INTRODUCING

SEMPER • SEAL

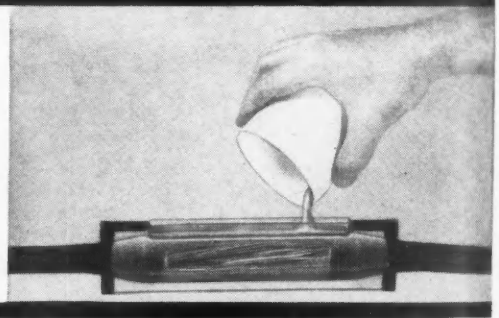
the new clear cable splice and plugging compound



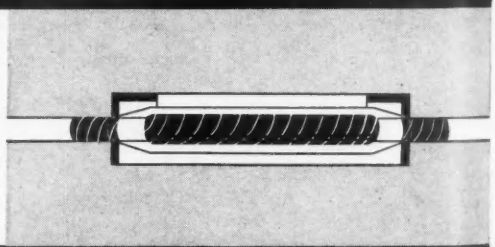
- **A new, clear, two-part formulation**
- **Provides perfect cable encapsulation**
- **Forms a secure, weather-gas-tight seal**
- **Flexible, crack-resistant compound**
- **Low exotherm and fast setup**
- **Withstands pressures exceeding 35 lbs.**
- **Controlled pot life**
- **Controlled cable penetration**

Semper-Seal, a new epoxy-type resin incorporating the advantages of proven durability, weather-tight sealing and transparent clarity for perfect cable encapsulation. The simple to use and transparent qualities of Semper-Seal enables field splices and blocks to be accomplished and inspected in a minimum of time with the visible assurity of knowing a solid seal has been made. Semper-Seal is a two-part compound consisting of a resin and hardener which when mixed together create a thermosetting action. The compound, through its own chemical change will, in 30-45 minutes, become a solid, clear, air-tight seal.

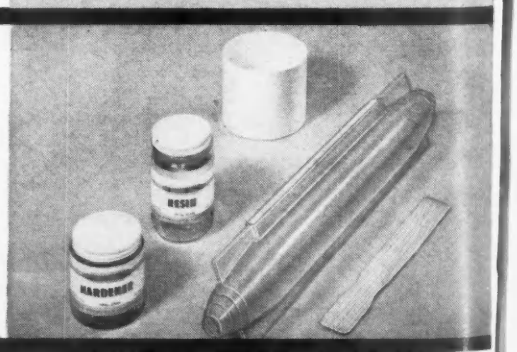
Write today for complete information on NEW Semper-Seal.



Semper-Seal being poured into the plastic Vu-Mold which has been tape-sealed over the cable opening.



Semper-Seal provides an ideal means of forming trouble splices on pressurized cables.



Semper-Seal is available in convenient kits or in bulk form.

C & S PRODUCTS COMPANY
Windsor Locks, Connecticut

PRODUCT DEPENDABILITY *is built into* P D

Phelps Dodge Direct Burial Telephone Wire & Cable!

In every Phelps Dodge direct burial telephone wire and cable, dependability of product is recognized as the first requirement for satisfactory service.

Phelps Dodge achieves product dependability by combining years of manufacturing experience with the most modern research and development facilities throughout its fabricating process. This controlled method of building in quality *during* manufacture assures customers reduced maintenance costs and trouble-free service—important advantages that only true product dependability makes possible.

Phelps Dodge will gladly help you fill your direct burial wire and cable requirements and recommend the correct constructions to fit your needs. Just call your nearest Phelps Dodge sales office.

PHELPS DODGE COPPER PRODUCTS CORPORATION

SALES OFFICES: Atlanta, Birmingham, Ala., Cambridge, Mass., Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Dayton, Denver, Detroit, Fort Wayne, Greensboro, N. C., Houston, Indianapolis, Jacksonville, Kansas City, Mo., Los Angeles, Memphis, Milwaukee, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, Portland, Ore., Richmond, Rochester, N. Y., San Francisco, St. Louis, Seattle, Tampa, Washington, D. C.

P D

Graybar announces

an IMPROVED TRANSISTORIZED REPEATER-AMPLIFIER

...made by Lynch

The new Repeater-Amplifier made by Lynch will plug into standard relay rack mountings . . . delivers more gain, more stable circuitry and better performance than any comparable repeater.

STEP UP PERFORMANCE WITH THESE EXCLUSIVE FEATURES

- **Provides highly stable output regardless of temperature or supply voltage fluctuations . . . . 15 db feedback steadies circuit performance.**
- **The Lynch amplifier gives you high gain . . . up to 38 db.**
- **Operates at high ambient temperature . . . the Lynch amplifier works at full power at 140°F. as easily as at 70°F.**
- **Improves audio performance . . . harmonic distortion is only 0.5% at + 10dbm, 300 to 4000 cycles.**

TRIM COSTS ALL ALONG THE LINE

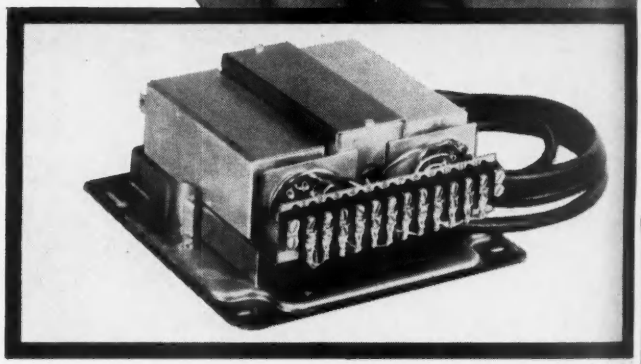
You'll save . . . because the Lynch transistorized repeater eliminates the need for 130 volt power supply. It works on as little as 12 volts, so is easily adapted to the 24 or 48 volt filament supply used by old type vacuum tube amplifiers.

No need to install DC power for smaller installations, since the repeaters are available with a special rectifier unit utilizing 117 volt AC.

You'll cut maintenance costs . . . because the new Lynch Amplifier is designed and manufactured to serve for years without attention. Circuits are printed on tough epoxy fiber-glass. It features a trouble-free standard-size gain control. Diode circuit protects transistors from reverse polarity.

You'll avoid ventilation costs . . . for the transistorized Lynch Amplifier does not generate heat.

Send for New Bulletin—Lynch makes the standout repeater amplifier for remote or central locations. Graybar distributes it nationally. Send today for descriptive bulletin.



AC Power Supply shown between two Amplifiers. Entire assembly may be mounted in #105 apparatus box. Mounting facilities and accessories are manufactured for all types of installations.

GraybaR

ELECTRIC COMPANY, INC.

420 Lexington Avenue, New York 17, N. Y.

Everything Electrical GraybaR ELECTRIC COMPANY

IN OVER 130 PRINCIPAL CITIES

INDEPENDENT TELEPHONE ASSOCIATION

THE ONLY INDEPENDENT DISTRIBUTOR SERVING THE INDEPENDENT TELEPHONE COMPANIES, COAST-TO-COAST

USITA

Congratulations
to the past and present officers,
directors and members of USITA on the
Independent telephone industries' achievements

See our Exhibit, USITA Convention, Oct. 9-12, Conrad Hilton Hotel, Room 560

SEE OUR CATALOG IN SWEET'S

INDEPENDENT

Sherron ACOUSTIC V SEE-THRU STEEL - STAINLESS STEEL OUTDOOR AND INDOOR TELEPHONE BOOTHS

There's a Sherron booth for every location and budget in either zinc coated or stainless steel

SHERRON METALLIC CORP., 1201 FLUSHING AVE., BROOKLYN 37, N. Y.

Operating Divisions of
Central Telephone Company
and Affiliates

La Crosse Telephone Corporation
Lexington Telephone Company
Middle States Telephone Company of Illinois
Virginia Telephone & Telegraph Company
Southeastern Telephone Company

PUBLIC SERVICE CENTRAL TELEPHONE SYSTEM

One of the larger independent telephone systems, operating 162 exchanges, serving 310,000 company-owned stations, of which over 90% are dial-automatic.

WILSON B. GARNETT
Vice President and
Virginia Division Manager
Virginia Tel & Tel. Co.
Lexington Telephone Company

ALLEN E. LINDEKUGEL
Minnesota Division Manager
Central Telephone Company

DONALD H. HANSEN
Wisconsin Division Manager
La Crosse Telephone Corporation

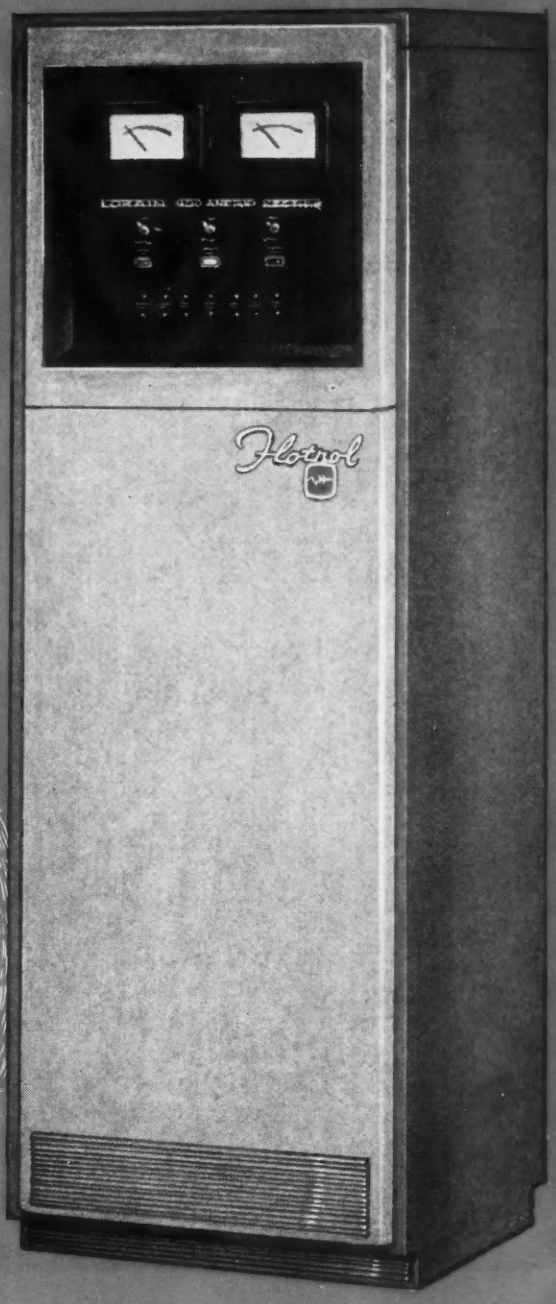
WILLIAM R. McGREW
North Carolina Division Manager
Central Telephone Company

KENNETH A. YOUNG
Iowa Division Manager
Central Telephone Company

MARTIN M. WANDREY
Vice President and
Illinois Division Manager
Middle States Telephone Company of Illinois

ERNEST M. MENENDEZ
Florida Division Manager
Southeastern Telephone Company

another "milestone" from Lorain



THE NEWEST OF THE

FLOTROL

BATTERY CHARGERS

TRANSILICONIZED

- Sensitive TRANSISTOR Control
- SILICON Rectifiers—protected against starting and load surges

All of the Flotrol features of the past—plus many new Lorain features—now in a single small compact unit. Write for literature.

MODEL F400D50

INPUT: 208/230 Volts, 60 Cycle, 3 Phase.
OUTPUT: 48 to 57 Volts DC, 400 Amperes.

Other models available.

LORAIN *Products Corporation* LORAIN, OHIO

LORAIN PRODUCTS (CANADA) LTD.—ST. THOMAS, ONTARIO

DESIGNERS AND MANUFACTURERS
SUB-CYCLE® CONVERTERS
FLOTROL® RECTIFIERS
PARTNERS IN DEPENDABILITY

Central Telephone Company

... of course!

and **B-N BOOTH PRODUCTS**

are your **BEST** buy

VISIT OUR DISPLAY ROOM AT THE CONVENTION. PARLOR 27, FIFTH FLOOR.

BENNER-NAWMAN products include:

• OUTDOOR BOOTHS • ALL GLASS BOOTHS • DIRECTORY STANDS • BUILT-IN BOOTH SETS • MULTIPLE BOOTH SETS
• CUSTOM DECORATOR BOOTHS • INDOOR BOOTHS • DIRECTORY RACK • JUNIOR BOOTHS • DIRECTORY CONSOLE

FINE PRODUCTS, INTELLIGENTLY ENGINEERED TO MEET THE REQUIREMENTS OF THE TELEPHONE INDUSTRY.

YOU'RE
INVITED
TO ATTEND
THE

L.M. BERRY and CO.

Exhibit

AT THE

U.S.I.T.A. Convention

ROOM 556-A
CONRAD HILTON HOTEL
CHICAGO, ILLINOIS

Telephone Directory Advertising Exclusively

. . . SERVING THE TELEPHONE

"We have more than enjoyed our relationship with you because it has been on such a friendly basis, with the feeling, at all times, that you were actually part of our organization."

K. B. Schotte, Jr., Vice Pres. & Gen. Mgr.
The Kittanning Telephone Co.

"I believe your representatives, with possibly a few exceptions, have produced increased revenue for us every year, and 1959 reached the highest in Directory revenue we have ever had."

G. Fred Switzer, President
Harrisonburg Telephone Company

"Your employees who have dealt with us have been most cooperative and pleasant, and have worked hard at maintaining good public relations and making our association a mutually profitable one."

John A. Harbaugh, President
Sullivan Telephone Company, Inc.

"I feel that a job so well done over a long period of years deserves commendation, which is why I wanted to write you at this time to express my heartfelt appreciation for the remarkable results you have accomplished."

Kelley McNish, President
Inter Mountain Telephone Company

"I should very much like to add my salute of 'well done' for the first fifty years and to add my best wishes for the future years."

Benjamin H. Cravens, President
Jamestown Telephone Corporation

L. M. BERRY

INDUSTRY FOR FIFTY YEARS

"No man in the telephone industry, or perhaps outside for that matter, more deserves or has earned the devotion for properly leading people and successfully operating a business than yourself."

J. N. Johnson, President & General Manager
Inter-County Telephone & Telegraph Company

"The Rochester Telephone Corporation feels that it is indeed fortunate to have been associated with you since the beginning of your career in the telephone advertising business."

W. A. Kern, President
Rochester Telephone Corporation

"We are also happy and proud that for more than half of this period (since 1931) our associations have been particularly close because you and your company have handled our directory advertising in a manner which has given us mutual satisfaction."

Carl D. Brorein, President
General Telephone Company of Florida

"Our own association with L. M. Berry & Company has always been pleasant and rewarding. We hope that such a relationship will continue indefinitely."

Hugh A. Barnhart, President
Rochester Telephone Company, Inc.

"We have been one of your many satisfied accounts. You and your splendid organization have done an excellent job for us which has been most profitable to us not only financially but also public relationswise."

L. D. Densmore, Executive Vice President
Central Telephone Company

HULMAN BUILDING • DAYTON 2, OHIO • BALDWIN 4-7421

AND COMPANY

UNITED UTILITIES, INC.

CORPORATE OFFICES: 304 NORTH CEDAR ST., ABILENE, KANSAS
EXECUTIVE OFFICES: 406 WEST 34TH STREET, KANSAS CITY, MO.

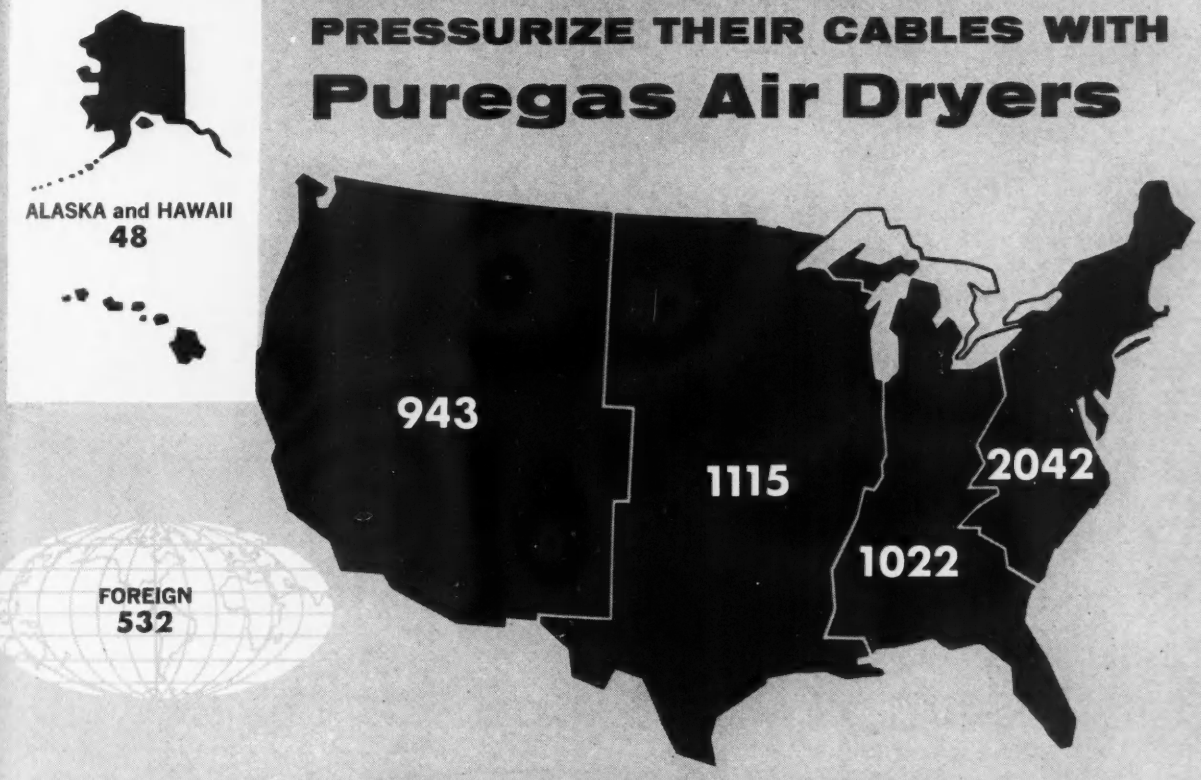
$25,000,000 BUDGET

That's the story of United Utilities, Incorporated for 1960. Operating telephone, power, natural gas, water and propane companies in 16 states, the United System possesses both service and geographical diversification.

Development of the natural resources in the Pacific Northwest, of agriculture and minerals in the Central and Middlewest, together with the growth of industry in the eastern and southern part of our System has created challenges that were, and still are, eagerly met.

New methods and modern equipment have made possible the efficient operations necessary throughout this period of growth and progress.

Now... 5700 OVER ~~4000~~ WORLD-WIDE TELEPHONE EXCHANGES PRESSURIZE THEIR CABLES WITH Puregas Air Dryers

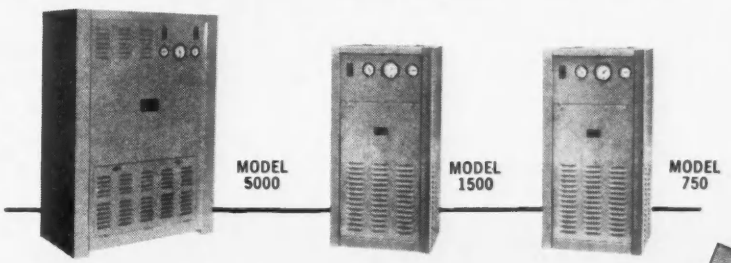


Puregas Air Dryers, continually pumping dry air under pressure through the air space within aerial and undeground cables, prevent moisture from penetrating conductor insulation and shorting out circuits.

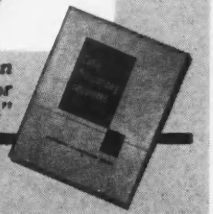
Millions of telephone subscribers all over the world now receive improved telephone service because of cable pressurization protection — and telephone companies in all 50 states and 27 foreign countries have discovered that Puregas Pressure Systems quickly pay for themselves through the substantial accrued savings from reduced maintenance costs.

Puregas Pressurizing Equipment is easy to install, economical to operate, simple to maintain — and models are available to accommodate the smallest to the largest cable plants.

Visit our exhibit at the U.S.I.T.A. Convention October 9-12 Chicago, Illinois, Parlor 24 (Room 521) Conrad Hilton Hotel. All Puregas models will be on display including a new air dryer being introduced publicly for the first time.



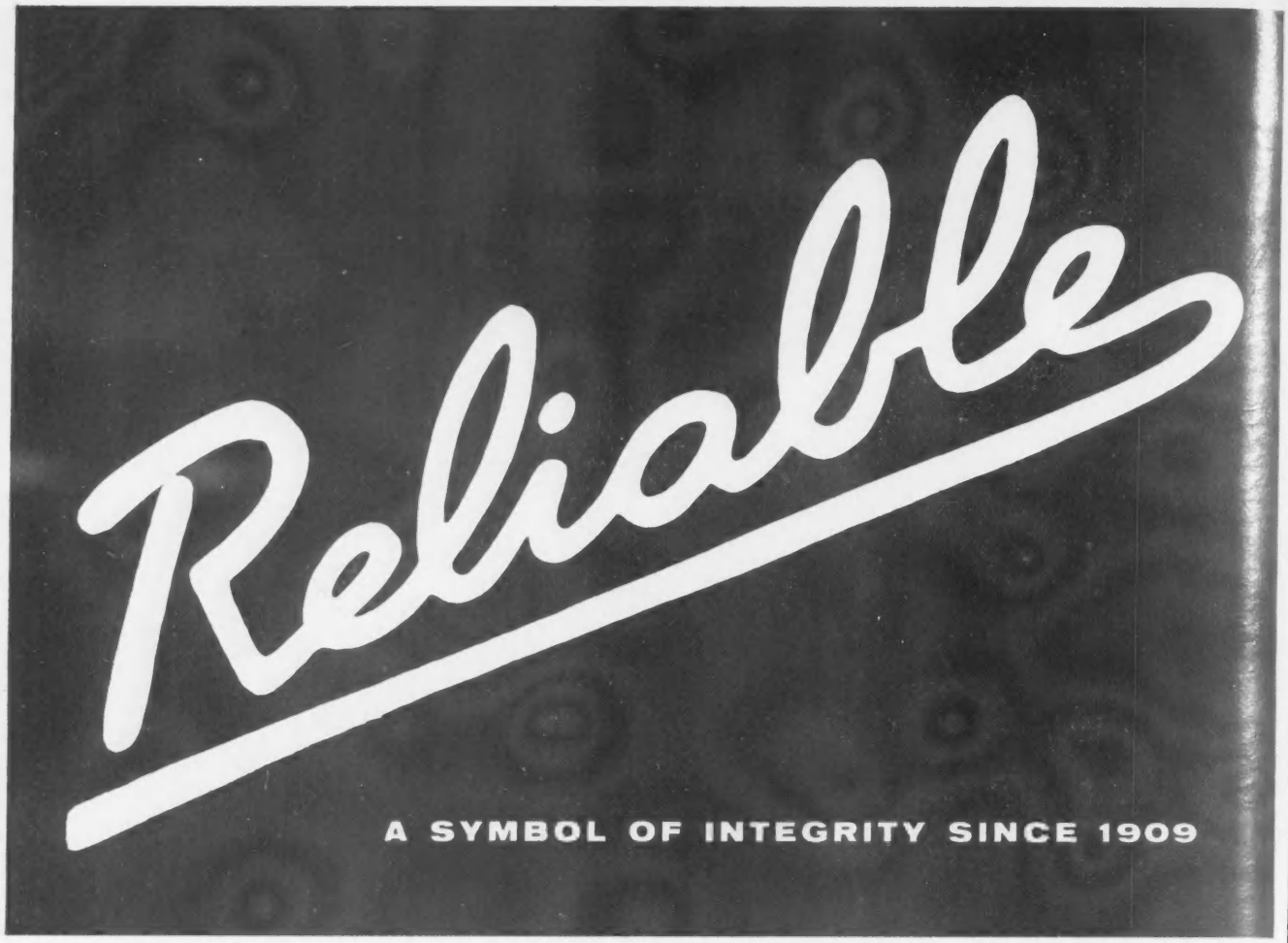
For complete information on cable pressurization and its surprisingly low cost, send today for "The Puregas Cable Pressurizing Catalog."



PEC

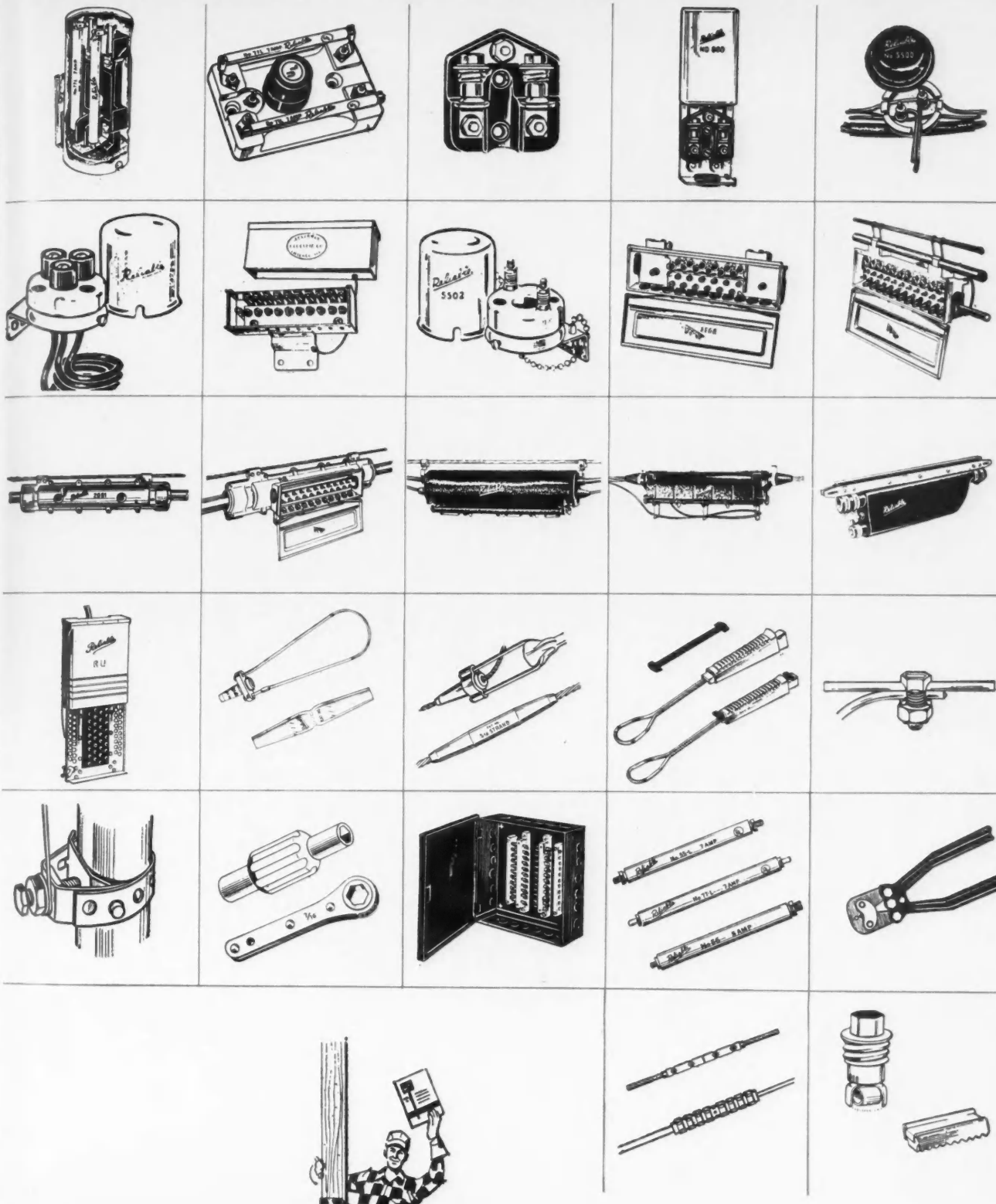
PUREGAS EQUIPMENT CORP.

578 OAK STREET, COPIAGUE, N. Y.



Splice Cases and Splice Case Terminals... Drop Wire Clamps... Ready Access Cable Terminals and Closures ... STRANDLINK® and STRANDVISE®... *SQUEEZ*® Sleeves... Indoor and Outdoor Station Protectors... Protected and Unprotected Cable Terminals and Blocks... *SQUEEZ*® Tools... High Voltage Protectors... Fuses... Protected and Unprotected Wire Terminals and Blocks... Wirelink and Wirevise... Cable Hangers ... Fuseless Protectors... Splicing Sleeves... Arresters

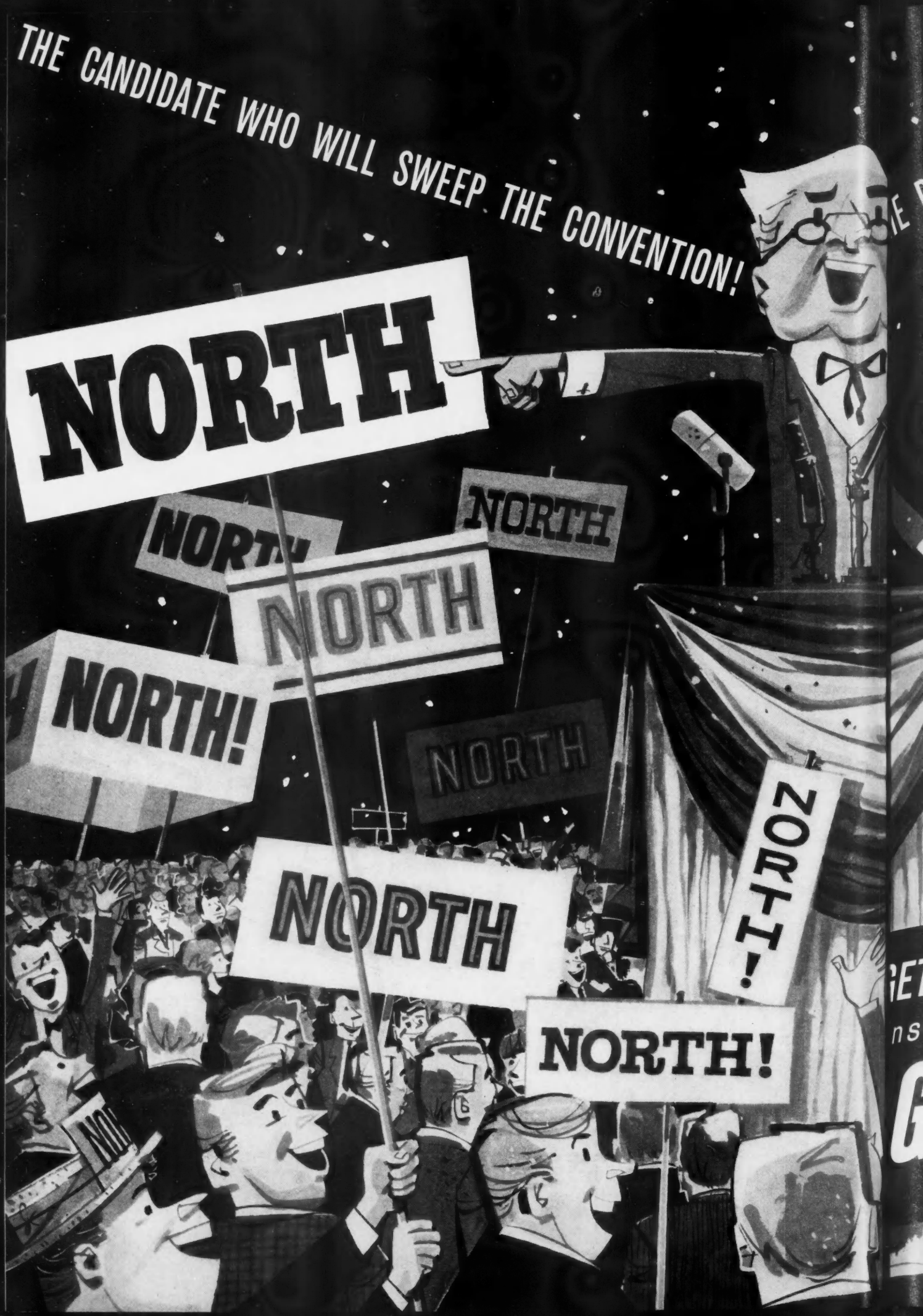
COMMUNICATIONS • PROTECTIVE and TERMINAL EQUIPMENT



You will want Reliable's Catalog 100 . . .
send for it today.

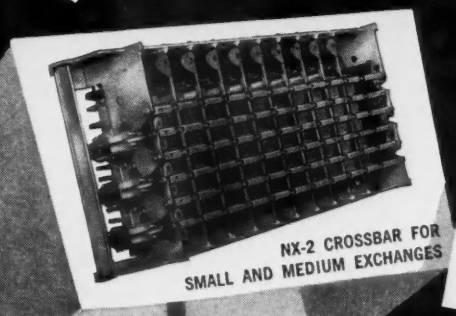
Reliable
ELECTRIC COMPANY • FRANKLIN PARK, ILLINOIS

A Symbol of Integrity Since 1909

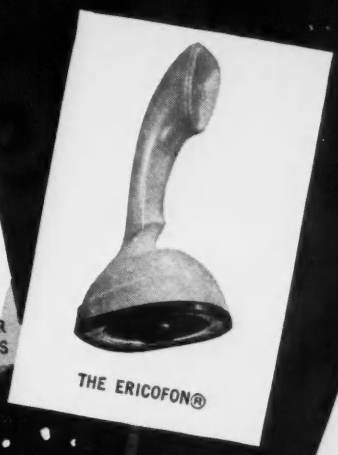

THE CANDIDATE WHO WILL SWEEP THE CONVENTION!
NORTH
NORTH
NORTH
NORTH
NORTH!
NORTH
NORTH
NORTH!
NORTH!

E PLATFORM WITH

THE STRONGEST PLANKS IN THE INDUSTRY



NX-2 CROSSBAR FOR SMALL AND MEDIUM EXCHANGES



THE ERICOFON®

SUBSCRIBER AND TRUNK CARRIER

THE N-541

LINE SUPPLIES

PREMIUM AuTollizer® TOLL TICKETING

ET ON THE BANDWAGON

nstruct your delegation to

GO NORTH!

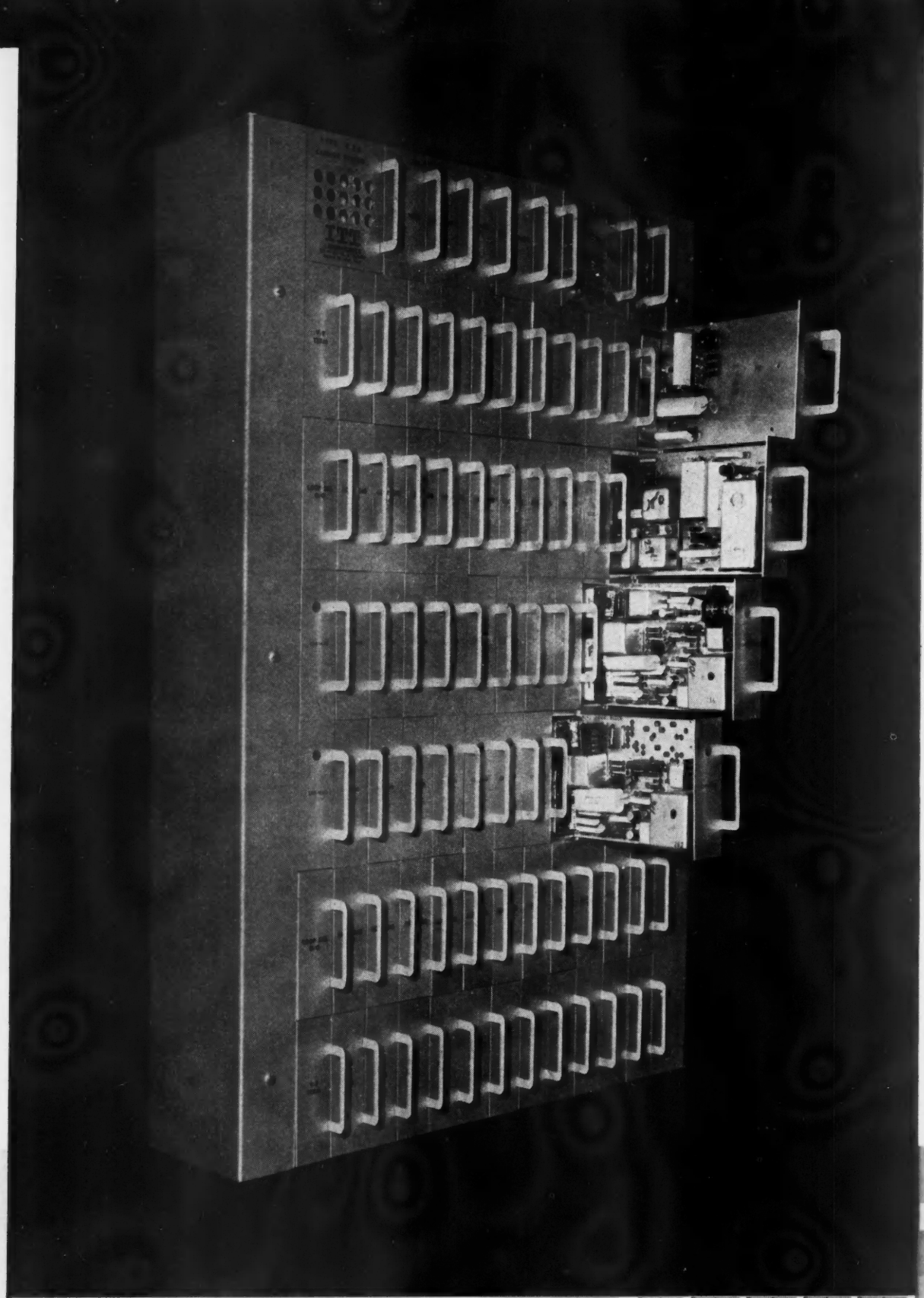
ROOMS 604-A, 605-A, 607-A, 609-A, 1960 USITA CONVENTION

THE DYNAMIC FORCE IN THE TELEPHONE INDUSTRY

NORTH ELECTRIC COMPANY

GALION, OHIO

NORTH



Meets toll standards at low cost!

Kellogg's NEW K-24 SHORT HAUL cable carrier

Kellogg's new K-24 short haul cable carrier meets toll standards at low cost through using transistors and printed wiring. Availability of regulating repeaters assure uniform transmission. Frequency staggering and novel circuits result in low noise and good performance.

Here are some reasons why the K-24 belongs in your modernization and growth programs:

- ☑ The K-24 has been specifically designed for economical application between 5 and 20 miles.
- ☑ Test installations throughout the country under service conditions prove the efficiency, high quality and economy of K-24 systems.
- ☑ The K-24 can increase the capacity of existing cable manyfold, deferring substantial investment for new cable, conduit or pole lines to care for trunk circuit growth.

Kellogg's K-24 incorporates the most modern principles of electronic design. It is *completely transistorized*, assuring a long trouble-free life. Units are of plug-in, modular construction for ease of replacement, expansion, or modification of the initial installation.

The K-24 is miniaturized and compact: it takes up 31½″ on a 19″ rack; 96 channels may be mounted in a single 11-foot bay.

A wide range of signalling options for most exchange applications, including that used between panel and crossbar offices, can be provided with the K-24.

For complete technical details on this latest achievement of ITT-Kellogg research, write Kellogg's Carrier Division at 2912 Wake Forest Road, Raleigh, North Carolina.

ITT KELLOGG
Division of International Telephone & Telegraph Corporation, 6650 South Cicero Avenue, Chicago 38, Illinois
Telephone and Transmission Department, 2912 Wake Forest Road, Raleigh, North Carolina
Regional Offices and Warehouses:
CALIFORNIA: 23 Broderick Road, Burlingame, Calif., Oxford 7-5780
GEORGIA: 1594 Southland Circle, N. W., Atlanta 18, Ga., SYcamore 4-2441
ILLINOIS: 4600 S. Tripp Ave., Chicago 32, Illinois, CLiffside 4-4300
KANSAS: 7th & Sunshine Road, Kansas City 15, Kansas, MAyfair 1-4418
NEW YORK: 327 North West Street, Syracuse, N. Y., HArrison 2-9251
TEXAS: 1359 Motor Street, Dallas 7, Texas, RIverside 7-5191
EXPORT: 4600 So. Tripp Ave., Chicago 32, Illinois, CLiffside 4-4300
ITT KELLOGG products available in Canada through
Standard Telephones & Cables Mfg. Co., Ltd.,
6600 St. Lawrence Boulevard, Montreal 14, P. Q., Canada

This never happens when you use

This instrument utilizes the heterodyne principle with balanced modulation and highly selective crystal filters which achieve the high resolution needed for accurate amplitude measurements of Carrier and Microwave Sub Carrier channels.

Direct reading in DBM for 135 and 600 ohm circuits or bridging.

Write for Literature

RYCOM INSTRUMENTS
A DIVISION OF
RAILWAY COMMUNICATIONS, INC.
9351 East 59th St.
Raytown, Missouri

Get Faster, More Accurate Measurements with
RYCOM INSTRUMENTS

FREQUENCY SELECTIVE VOLTMETER

WAVE ANALYZER

- Accuracy to ± ½ db
- Low Intermodulation
- Low Spurious Response
- High Degree of Selectivity due to Crystal Filters
- Internal Calibration
- Sets up Quickly
- Easy to Use

- Offers fast accurate amplitude measurements throughout the frequency spectrum of 300 cycles to 400 kc

SPECIFICATIONS
Model 2174-A

Frequency Range: 300 cycles to 400 Kc. Level:—72 dbm to + 32 dbm (full scale) at 600 OHMS Accuracy: ± .5db from —80 to +32 dbm; 1 to 400 Kc. Selectivity: 6db down 80 cycles off: 60 db down 480 cycles off. Wider crystal filter and demodulator for monitoring SSB, AM, and FM—internal speaker and headset jack. Spurious Response: Below 60db, low intermodulation: Below 60 db. Power Requirements: 115V, 50/60 cycles—48 Watts. Weight, 28 lbs.

Now in Chicago!

TELE-NORM presents

THE WORLD'S MOST ADVANCED PABX SYSTEMS AND KEY TELEPHONES

IF YOU WANT TO SEE SOMETHING TRULY NEW AND REVOLUTIONARY IN TELEPHONY, MAKE A DATE TO MEET US AT THE

BLACKSTONE HOTEL

Demonstrations daily Oct. 9-12 • English Room, Floor A, from 9 a.m. on

TELE-NORM CORPORATION
55 WEST 42 STREET • NEW YORK 36, N. Y. • PENNSYLVANIA 6-5221

New General Electric Transistorized Carrier-Multiplex System

HANDLES UP TO 600 VOICE CHANNELS WITH ¼ THE POWER, 1/10 THE SPACE OF TUBE EQUIPMENT

General Electric's new TCS-600 is the world's first fully transistorized carrier-multiplex system capable of handling from one to 600 voice channels on either metallic circuits or a single radio circuit. A single sideband suppressed carrier system, the TCS-600 meets or exceeds all domestic and CCITT standards.

Power Requirements: The TCS-600 consumes less than 900 watts of DC power for 600 voice channels with terminations — only 8 to 25 per cent of the power needed by tube equipment. Users will realize dramatic savings in purchased power, station batteries and chargers.

Mounting Space: Thanks to transistorization, the TCS-600 takes only one-third to one-tenth the space occupied by conventional tube equipment. Now 600 voice channels will fit into the same area taken by 120 channels of tube equipment. You can expand at any time to full capacity without costly rewiring or building alterations.

No Relays: The TCS-600 is the first carrier system to bring you the full benefits of completely static operation. No relays are used — all signalling, alarm indication and switching are accomplished by silicon controlled rectifiers or power transistors.

Reliability: The TCS-600 has a parallel circuit for each active circuit in the common equipment. Thus if any circuit should fail, all but a single voice channel will continue to operate via the parallel circuit.

Long Life: Carefully selected transistor types, operating well below recommended temperature and current ratings, assure exceptionally long life for the TCS-600. Lower operating temperatures also greatly extend the life of other components.

You'll be surprised by the low first cost and high yearly savings made possible by the TCS-600. For full details, write General Electric Company, Communication Products Dept., Section 45100-1 Mountain View Road, Lynchburg, Va.

GENERAL ELECTRIC

Norelco® INTRODUCES NEW NE-6 VOICE REPEATER

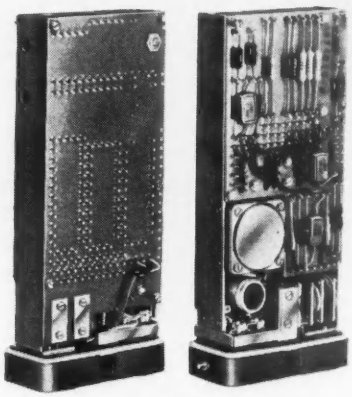
ALL IN ONE

The only **ALL IN ONE** *completely transistorized series-shunt repeater*

A COMPLETE UNIT, the Norelco NE-6 combines series and shunt repeaters with built-in network. It is suitable for both trunk and subscriber circuits, loaded or non-loaded. It can pass A.C. and D.C. signals. The NE-6 operates on a 24 or 48 volt central office battery, and each repeater requires only 15 ma. A standard nine foot rack holds 180 repeaters. Modern plug-in type construction permits the repeater to be removed from the line without interrupting the circuit.

Check these important features:

1. Suited for loaded or non-loaded facilities.
2. Operational gains:
   Intermediate Repeater: 17 db
   Terminal Repeater: 8 db
3. Compatible with A.C. and D.C. signalling.
4. Operates on central office battery, 24 or 48 volts ±30%.
5. Compact, airtight plug-in construction.
6. High quality components.
7. Quick and easy to install.



The simple strapping panel on one side of the repeater allows quick and easy network balancing by interconnection of soldering pins which are clearly marked with element values.

For full details contact your local distributor or:

NORTH AMERICAN PHILIPS COMPANY, INC. TELEPHONE PRODUCTS AND SYSTEMS DEPARTMENT
100 EAST 42nd STREET, NEW YORK 17, NEW YORK

REX men jump . . . when you call!

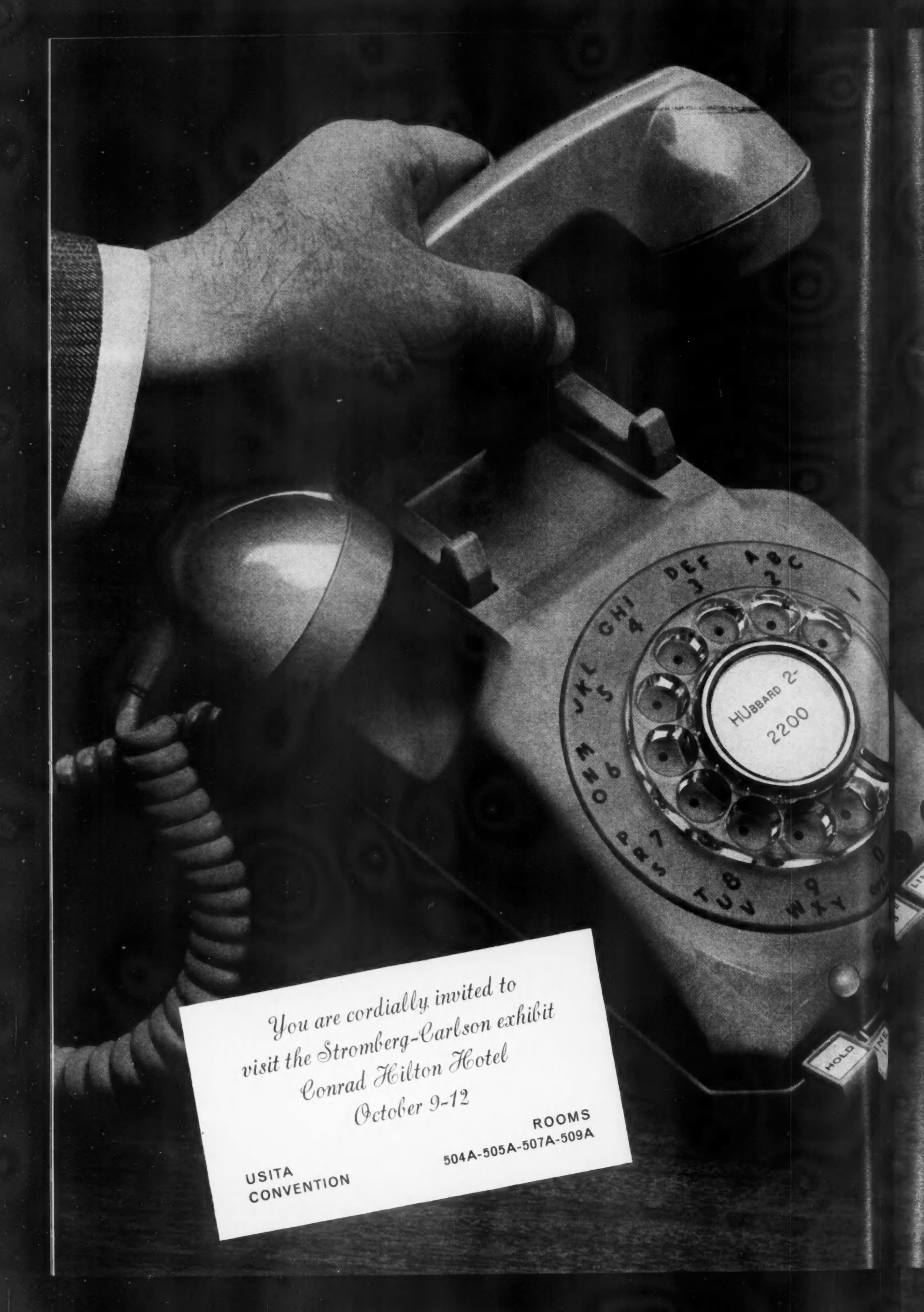
Plastic Insulated Telephone Wire and Cable

. . . fully described and illustrated

in this brochure. Write for your copy.

INDEPENDENT

TO FIND OUT ABOUT REX SERVICE, JUST CALL WILLIAM BRAND-REX DIVISION AMERICAN ENKA CORPORATION, 31 SUDBURY RD., CONCORD, MASS., EMERSON 9-9630


You are cordially invited to
visit the Stromberg-Carlson exhibit
Conrad Hilton Hotel
October 9-12
ROOMS
504A-505A-507A-509A
USITA
CONVENTION
HUbbard 2-
2200
HOLD

Compare the prices!

Want proof that 6K-1 multi-line equipment by Stromberg-Carlson costs you less than a comparable PBX system?

Compare! Here's what you'll find.

The price of the 6K-1 is competitive with the prices of other systems of the same type. The difference is that the 6K-1 costs you far less to install.

How come? This system installs in less time than any similar PBX. Your own people can do the job quickly and easily. No outside engineering help needed.

What's in it for you? Quicker amortization of your plant investment! More profit sooner!

Your subscribers get: small, easy-to-use 1575-W 6-line telephones. Selective signaling of up to 15 local stations. Exclusion feature. Tie-lines to other telephones. Audible plus visual trunk signals. Choice of colors. And more.

Get that price comparison now. The man to contact is your nearest Stromberg-Carlson representative. In Atlanta call TRinity 5-7467; Chicago: STate 2-4235; Kansas City: HArrison 1-6618; Rochester: HUbbard 2-2200; San Francisco: OXford 7-3630.

STROMBERG-CARLSON
A DIVISION OF GENERAL DYNAMICS

don't miss the most unique exhibit at the USITA Convention

...LEARN HOW TELEPHONE SERVICE WILL SOAR IN THE '60's

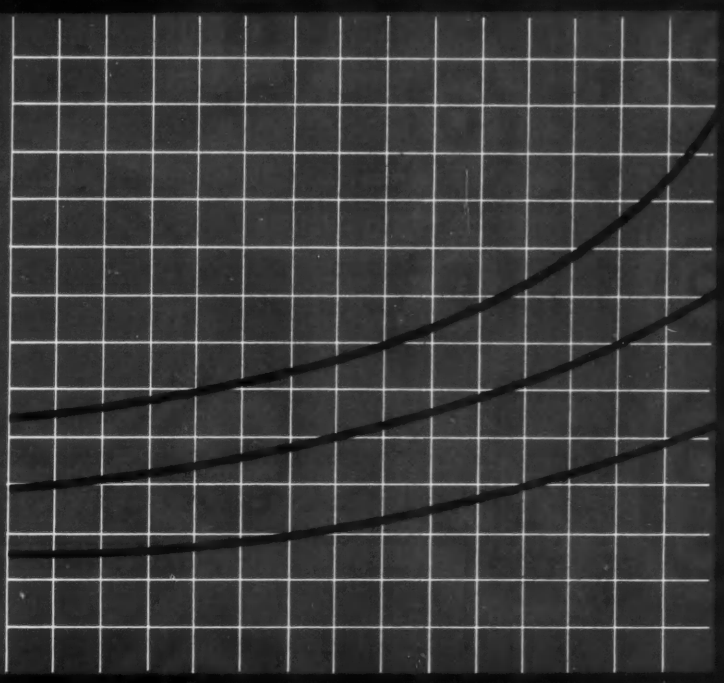
See the new products, new promotional plans, new services for the 1960-1970 decade that will see independent telephone service grow to new highs!

ITT KELLOGG
exhibit

ROOM 500
OCTOBER 9-12
CONRAD HILTON
CHICAGO

P.S. Don't forget to tell your friends you can be reached at the Convention through the famous Kellogg Message Center, Room 500.

New extensions
New telephone service
Toll traffic

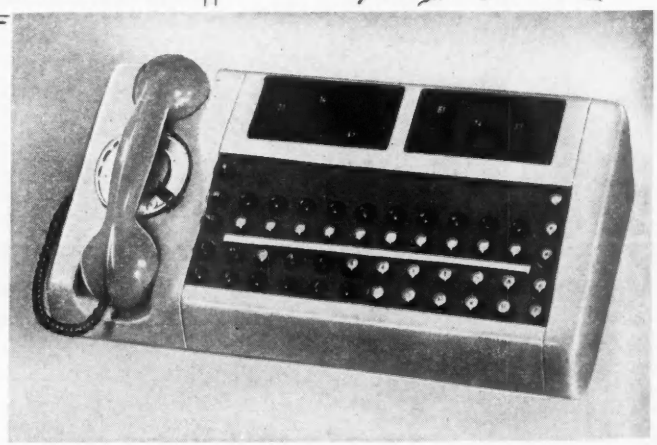


THE KEY

To Really convenient "ROOM SERVICE"

NEW FROM USI...

- **Key Panel For Message Waiting Service**
- **Resettable Registers For Recording Local Calls**
- **Room-to-Room Dialing**
- **Night Service for Retired Desk Clerk**
- **Optional Access to Toll Calls for Guests**

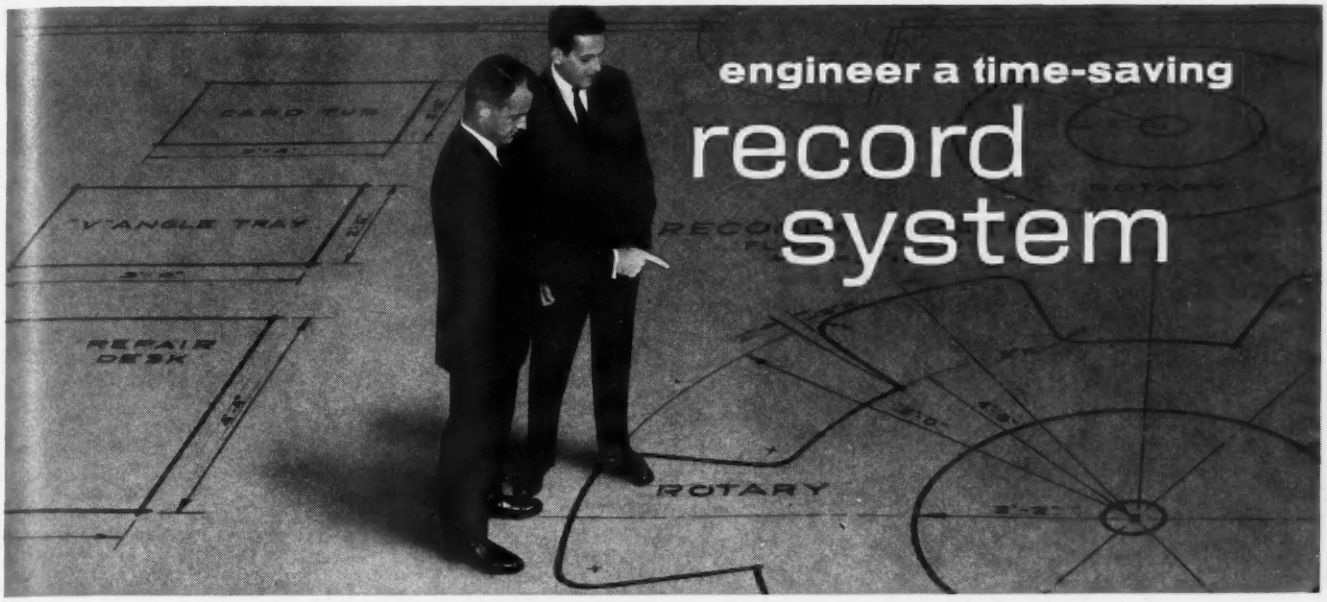


Want to offer your motel subscribers the equivalent of an extra front office employee? **Why not visit or call us at Rooms 619A and 620B during the USITA Convention in Chicago?**

UNITED STATES INSTRUMENT CORPORATION

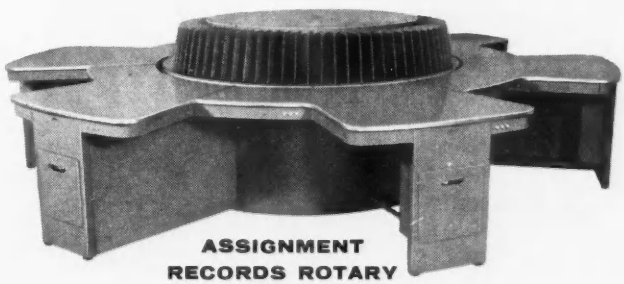
CHARLOTTESVILLE, VIRGINIA

whatever your department call ACME VISIBLE to



Please note that important word **"system."** Your man from Acme is a systems engineer, thoroughly trained to analyze the record systems in every telephone company department. His objective: **speed up service and reduce cost of operation** by untangling the snags in the flow of your paper work. Ask your nearby Acme representative to help you engineer a time-saving system. It will include the correct equipment, record forms or supplies you need.

TYPICAL ACME EQUIPMENT



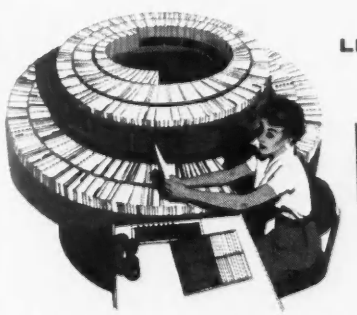
ASSIGNMENT RECORDS ROTARY

New Acme Visible push button Rotaries speed selection of 100 books to the user at the touch of a button. From 1 to 12 or more workers can use one set of records without moving from their desks.

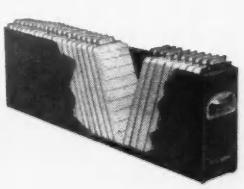
ACME VISIBLE

ACME VISIBLE RECORDS, Inc. Crozet, Virginia

LINE CARD RECORDS



Modern Acme Visible Rotary gives 1, 6, 12 or more users instant access to as many as 250,000 records.



New V-Angle Trays with "measured space control" flips open to any card. Stays open . . . leaves hands free for copying.

Movable Line Card Tubs in many sizes. Variable partitioning allows for possible changes in line card dimensions.

TYPICAL ACME SYSTEMS

ACCOUNTING
- Toll Ticket Sorting
- Pay Roll Deductions
- Computed Mileage Rate Charts
- Employee Service Records
- Federal Income and F.I.C.A. Tax Tables
- Fractional Charge and Allowance Tables
- Wage Computation Tables

COMMERCIAL
- Service Representatives Handbook
- Classified Advertising Control
- Mileage & Facilities Record

ENGINEERING
- Cross-Index to Correspondence
- Map Desk Assembly
- Photo Panels
- Project Record
- Record of Estimates
- State of Construction Projects

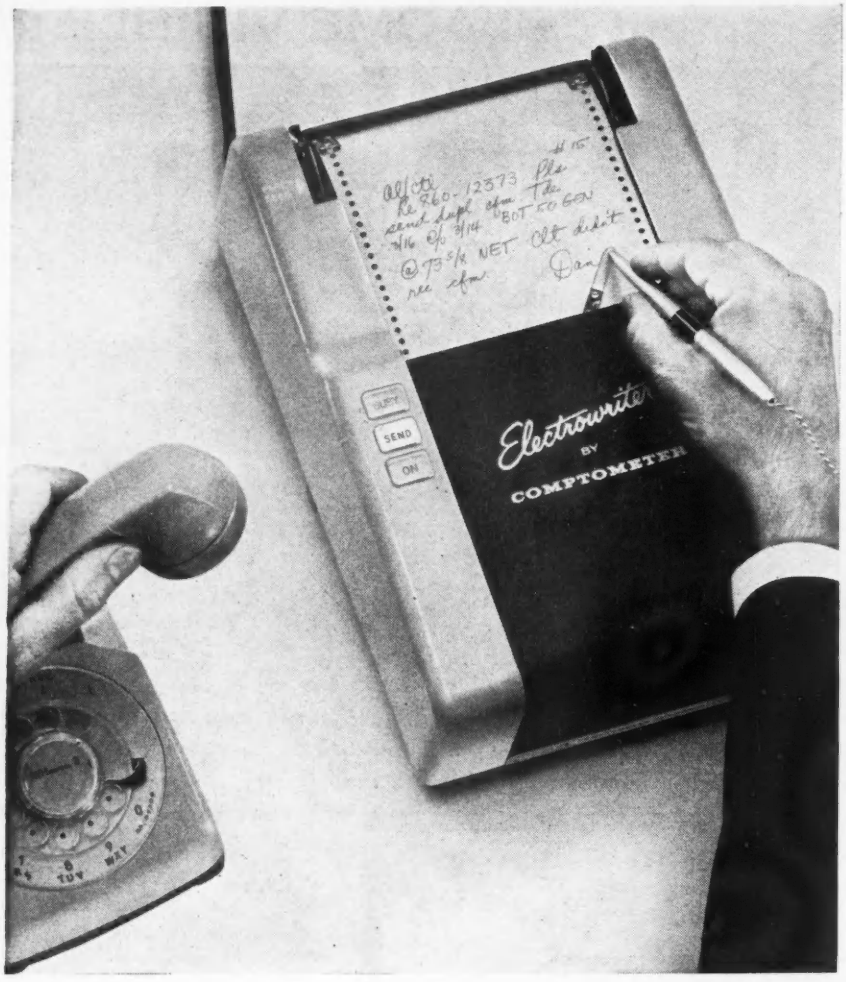
PLANT
- Cable and Terminal Records
- Left-In-Equipment Records
- Line Card Filing
- Service Order Dispatching
- Parts Index and Bin Location
- Circuit Layout Records

PERSONNEL
- Seniority Listings
- Tour of Duty Roster
- Vacation Schedule
- And Many Others

MAINTENANCE
- Weekly Routines
- Monthly Routines
- Annual Routines

TRAFFIC
- Toll Ticket Sorting
- Central Information Listing
- Flexoline Keyshelf Units
- Force Adjustment
- Multi-Card Bulletin Holders
- Negative Intercept Records
- Photo Panels
- Underglass Bulletin Holders

AND MANY OTHERS



Electrowriter® Communication System

A new communications service!

Electrowriter® Communication Systems offer a Telephone Company these benefits:

1. MORE REVENUE. Electrowriter Systems are a practical *addition* to a Telephone Company's line of service.

2. A MORE COMPLETE BUSINESS COMMUNICATIONS SERVICE. Electrowriter Systems have broad applications for your customers—"Put it in writing" is a *business must.*

3. AN EXCLUSIVE SALES TERRITORY*.

Plus time-saving applications within most Telephone Companies' own procedures.

...ill increase your operating revenues!

Electrowriter Instruments transmit handwritten messages or sketches as they are written over:

1. Local or long distance telephone networks to provide alternate voice/write service;
2. Private leased lines of any distance with or without telephone sets;
3. Any telephone quality pair of wires (no ground).

✻ ***Come, see for yourself! We'll be at Room 624A, Conrad Hilton, USITA Convention, Oct. 9-12,***

Electrowriter®

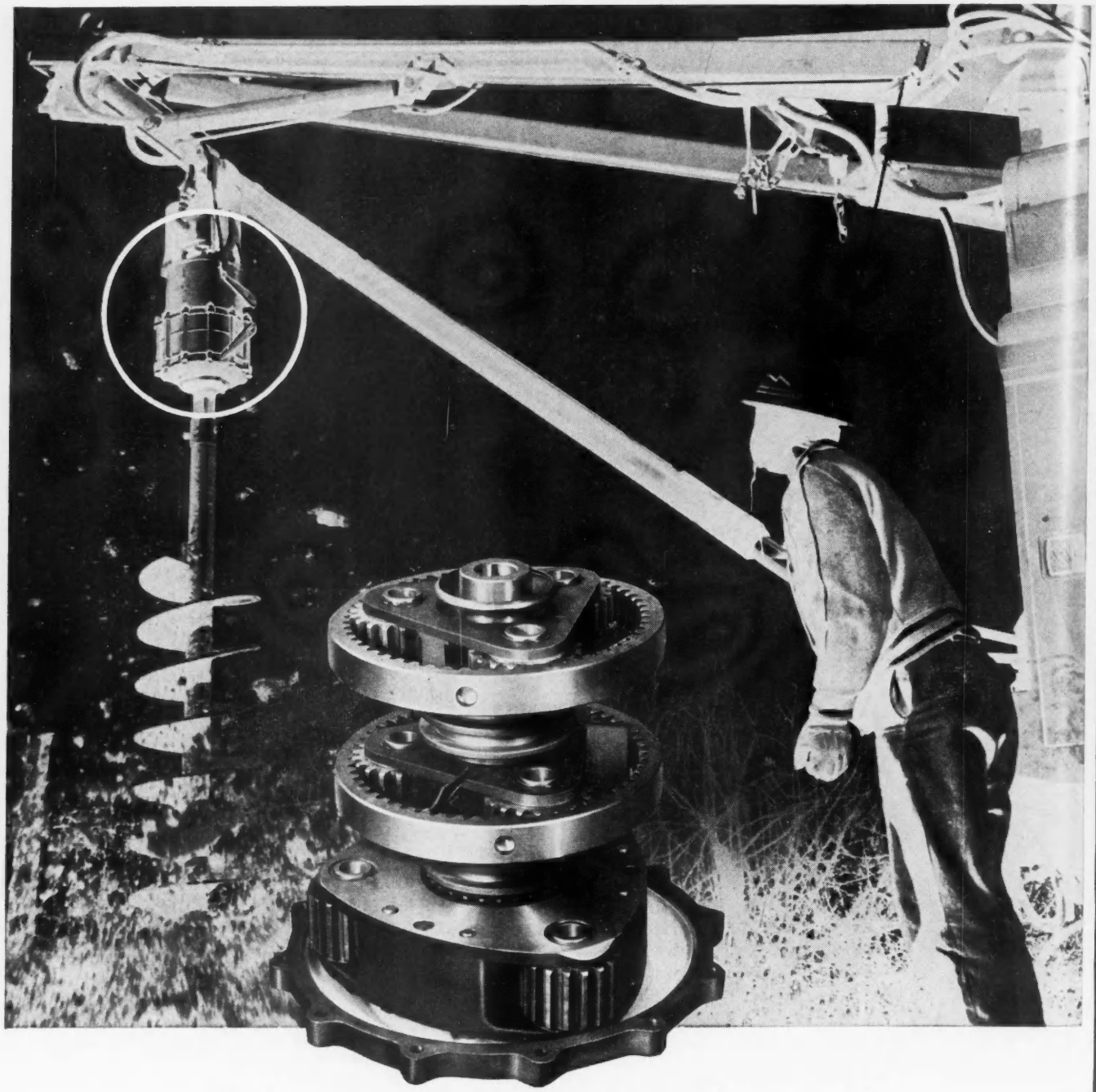
COMMUNICATION SYSTEMS BY

COMPTOMETER

CORPORATION

5600 Jarvis Avenue • Chicago 48, Illinois • SPring 5-2400

®Electrowriter—TRADEMARK REGISTERED U. S. PATENT OFFICE



What goes on in here?

It's what goes on inside the compact housing of Holan's 5400 Earth Borer that makes it the most powerful derrick-suspended digger in the field.

It's here that Holan's exclusive planetary "gear train" takes power from the hydraulic motor and harnesses it for the toughest digging.

The first and second planets are engaged for normal digging. The third planet is added to the "train" for boring in frozen or rocky soil — enabling the digger to develop 8,400 pounds of torque.

Two levers operate the gears. For spin speed, only the first planet is engaged by pulling up the speed selection lever with a lanyard. When released, a spring-loaded shifting fork returns the borer to two-planet operation for normal digging. The high-torque planet is engaged to work with the first and second planets by a second shifting fork located lower on the housing.

Holan's "gear train" use of the planetary system gives you fast spin, normal digging, and 8,400 pounds of torque with augers up to 30″ — all in the same digger. And it can be used on any Holan derrick except the Model 25C.

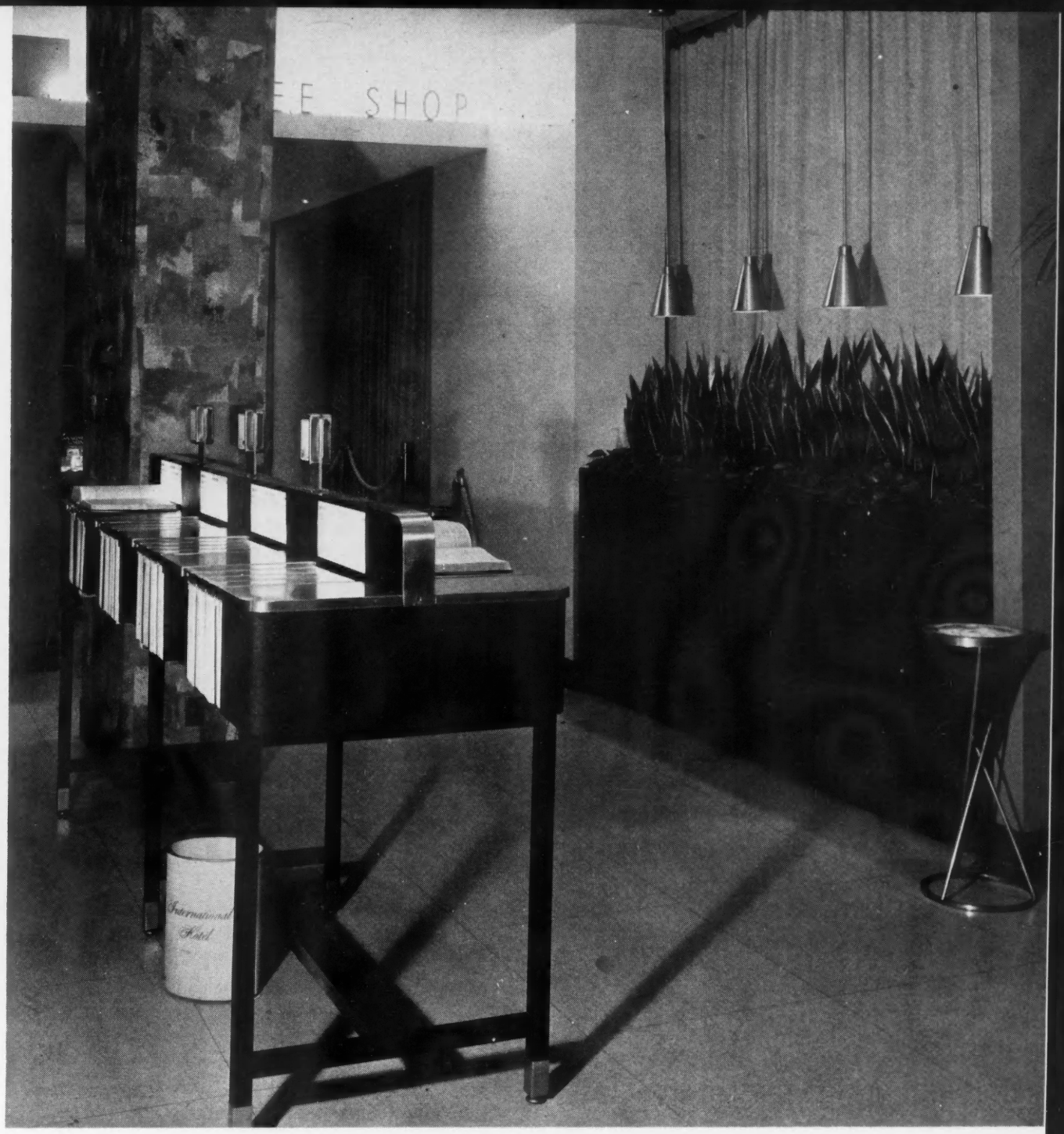
Look into the 5400 (patents applied for) before you buy any digger. Write us — or call your Holan Field Representative — for complete details.

Holan Corporation, 4100 West 150th Street, Cleveland 35, Ohio
Plants in: Cleveland, Ohio; Griffin, Georgia; Phoenix, Arizona

Holan

Subsidiary of THE OHIO BRASS COMPANY

HOLAN



DIRECTORY TABLE

One of many REDYREF installations by New York Telephone Company at New York's Idlewild Airport, this free standing unit accommodates over sixty indexed out-of-town directories for guests of International Hotel.

YOUR AIRPORT is but a short time away.

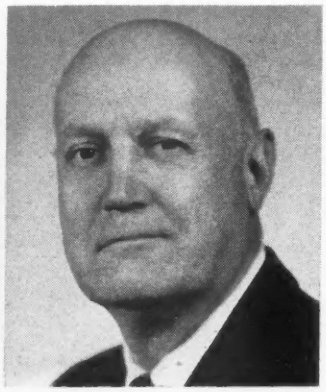
Are its directory facilities adequate for the inter-city comparisons and growing DDD business of today's jet traveller?

PRESSED & WELDED STEEL PRODUCTS CO., INC.
38-61 11th Street
Long Island City 1, New York

Area Code 212
STillwell 4-3690

USITA PLANS "BE

President
FOSTER B. McHENRY
Jefferson City, Mo.



1st Vice Pres.
C. C. PEARCE
Riceville, Ia.

2nd Vice Pres.
FRANK G. LaPRADE
Martinsville, Va.

3rd Vice Pres.
THOMAS A. BOYD
New York, N. Y.

Program for 63rd annual convention of the U. S. Independent Tel. Association features addresses by Don G. Mitchell, J. Lewis Powell, and Dr. A. D. Holt.

MEMBERS of the Independent telephone industry generally agree that they can always expect to hear some of the country's outstanding speakers at the annual convention of the United States Independent Telephone Association (USITA). This year will be no exception, and last month the association's officers and staff announced with pride the names of those who will address the general sessions and conferences of USITA's 63rd annual convention at the Conrad Hilton Hotel, Chicago, on October 9-10-11-12.

The distinguished and well-known figures who have been recruited to inform, entertain, and inspire those attending the USITA convention include:

Don G. Mitchell, president of General Telephone & Electronics Corp. and chairman of its subsidiary, Sylvania Electric Products, Inc.;

J. Lewis Powell, internationally famous lecturer, humorist and author; and —

Dr. A. D. Holt, president of the University of Tennessee at Knoxville, renowned educator and author, who will give the traditional inspirational closing address as the "grand finale" of the four-day gathering.

Recognized as one of industry's leading authorities on manufacturing, scientific marketing, and human relations, Don G. Mitchell has had a varied and distinguished career. A member of the Sylvania organization for 17 years, he was elected president and director of General Telephone & Electronics Corp. when Sylvania merged with General.

Prior to his affiliation with Sylvania Mr. Mitchell was associated with several large industrial corporations in various executive capacities, including McGraw-Hill Publishing Co., Niagara Hudson Co., Pepsi-Cola Co., Marshall Field & Co., and American Can Co. He is a gifted speaker of national stature and reputation and no telephone man or woman will want to miss his address at the general session of the convention on Wednesday, October 12, in the Williford Room at the Conrad Hilton Hotel.

J. Lewis Powell is an internationally famous lecturer, humorist, and author whose topic will be "Cave Man To Space Man." Having worked in both private industry and in government, Mr. Powell is a dynamic, forceful speaker who uses shirt-sleeve English in his

ET" CONVENTION

By JOHN G. REYNOLDS

crusade for progress. His talks deal with various aspects of mankind's stumbling progress from muscles to missiles.

Dr. Holt, whose topic at the closing general session, Wednesday, October 12, will be "How To Be A Cobalt Bomb," is a nationally known figure who has devoted a lifetime to education, having run the gamut from a high school athletic coach to his present position as president of one of the country's great universities. He is a former president of the National Education Association.

The above-mentioned speakers are only a few of the men who will address the convention. Other timely, instructive, and stimulating addresses will be made by leaders of the industry including addresses by President Foster B. McHenry and Executive Vice President Clyde S. Bailey.

Departmental Conference

SIX departmental conferences — Accounting, Commercial, Engineering, Plant, REA Borrowers, and Traffic — will be featured at USITA's 63rd annual meeting.

The REA Borrowers' Conference on Sunday afternoon, October 9, will be addressed by Administrator David A. Hamil of the REA; D. B. Corman, South Central Rural Telephone Cooperative Corp., Inc., Glasgow, Ky.; Harold C. Ebaugh, Triangle Telephone Cooperative Telephone Assoc., Havre, Mont.; and J. K. Galloway, Winter Park Telephone Co., Winter Park, Fla.

Speakers at other conferences will include Douglas Smith, General Telephone & Electronics Corp., New York City; Donald MacEachern, American Telephone & Telegraph Co., New York City; Carl Hanenburg, West Coast Telephone Co., Everett, Wash.; C. D. Hansel, GT&E Service Corp., New York City; Robert Davis, Telephone Service, Inc., Lima, Ohio; William A. Kern, Rochester (N. Y.) Telephone Corp.; John Noggle, Central Telephone & Telegraph Co., Charlotteville, Va.; James R. De Pauw, Arthur Andersen & Co., Chicago; Paul H. Kaufman, Northern Ohio Telephone Co., Bellevue; D. A. Perigo, West Coast Telephone Co., Everett, Wash.; William Gove, The Bill Gove Organization, Coral Gables, Fla.; B. H. Pryor, General Telephone Co. of Calif., Santa Monica; W. A. Stevens, American Telephone & Telegraph Co., New York City; Robert C. Hunt, Blair (Neb.) Telephone Co.; and Dr. Walter M. North, Knox College, Galesburg, Ill. (*See Convention Program, page 48, for complete information on each conference.*)

Banquet, Exhibits, Entertainment

THERE will, of course, be the customary interesting social and entertainment features, including the annual banquet scheduled for Tuesday night, October

Exec. Vice Pres.
CLYDE S. BAILEY
Washington, D. C.

Treasurer
CARL D. BROREIN
Tampa, Fla.

Sec. & Asst. Treas.
GEORGE C. RICHERT
Washington, D. C.

Asst. Sec.
COURTNEY S. SNYDER
Washington, D. C.

11, in the Grand Ballroom of the Conrad Hilton Hotel, and the Independent Telephone Pioneer Association's meeting, which will feature an address by Dr. Nicholas Nyaradi.

There will also be the two floors of eye-opening exhibits by the industry's manufacturers and suppliers. These exhibits, always one of the most arresting and worth-while features of the convention, this year give promise of outdoing all previous displays.

All in all, it looks like a grand convention and those who have not already done so will do well to make their hotel and travel reservations promptly.

The usual advance registration plan will be followed. If you want to avail yourself of this plan and save time in obtaining your badge and printed program, send names, titles and addresses of the representatives of your company who are to attend the convention, together with the names and addresses of the members of their families and friends who will accompany them, to United States Independent Telephone Association, 438 Pennsylvania Bldg., Washington 4, D. C.

Again this year there will be no advance sale of tickets to the banquet. The USITA registration desk will be open from 10:00 a.m. to 8:00 p.m. on Sunday, October 9, from 9:00 a.m. to 5:00 p.m. on Monday and Tuesday, October 10 and 11, and from 9:00 a.m. until noon on Wednesday, October 12. The banquet ticket desk will be open from 10:00 a.m. to 7:00 p.m. on Sunday, from 9:00 a.m. to 5:00 p.m. on Monday, and from 9:00 a.m. until 2:30 p.m. on Tuesday. Each ticket will have a table number printed on it, but the location of the table cannot be determined until the afternoon of Tuesday, the 11th. The price of the tickets will be $10. each. There will be no registration fee.

12 Directors To Be Elected At Business Session

AN ELECTION of 12 directors for three-year terms will be held in the forenoon of Wednesday, October 12. The terms of the following directors expire in 1960: H. G. Allen, F. S. Barnes, H. A. Barnhart, H. R. Bollinger, T. A. Boyd, C. R. Cashel, E. H. Danner, R. J. Fegan, Wm. C. Henry, W. A. Kern, F. B. McHenry, and W. G. Winters.

In accordance with the provisions of Section 2 of Article V of the By-Laws, Charles F. Cashel and William A. Kern were appointed to the board by the board of directors at a meeting on March 22, to fill the vacancies caused respectively by the death of Elnathan C. Gates and the resignation of Donald H. Campbell. (The By-Laws authorize the board of directors to fill vacancies occurring in its membership between annual meetings by the appointment of qualified persons to serve until the next annual meeting.)

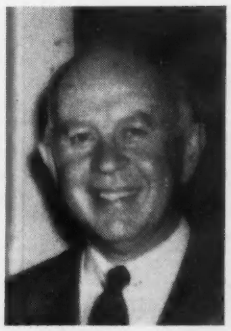
In addition to the above, one director will be elected for a two-year term expiring in 1962 to fill the vacancy caused by the death of Ralph F. Lucier. Paul H. Henson was appointed by the board of directors at a meeting on March 22, 1960 to fill this vacancy.

U-S-I-T-A
Committee Chairmen And Directors of Sub-Committees

Executive
FOSTER B. McHENRY
Jefferson, Mo.

Highway Relocation
FRANK G. LaPRADE
Martinsville, Va.

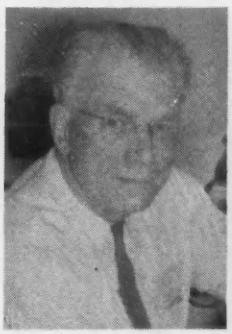
Mfgr's. Exhibit
GEORGE MORSE
Chicago, Ill.



Tax
R. A. LUMPKIN
Mattoon, Ill.

Telephone Marketing
A. R. STACEY
Sunland, Calif

Toll Compensation
W. R. JARMON
New York City



R. H. HERRICK
Lorain, Ohio
Subcommittee on
Radio & Carrier

F. L. KAHN
Northlake, Ill.
Subcommittee on
Direct Distance Dialing

A. W. LAMBERT
San Francisco, Calif.
Subcommittee on
Message Toll
Compensation

Accounting
W. H. TODD
Bellevue, Ohio

Advertising
C. C. PEARCE
Riceville, Ia.

Banquet
J. B. COOK
Chicago, Ill.

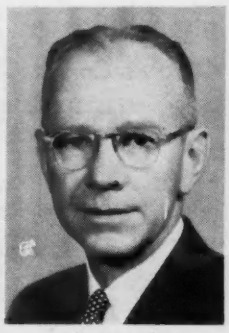
Commercial
K. L. LAWSON
Lincoln, Neb.

Employment Relations
CLYDE McFARLIN
Montezuma, Ia.

Engineering
A. A. WILSON
Mattoon, Ill.

Membership
H. E. HAGEMAN
Lorain, Ohio

Military Liaison
W. M. DRIGGS
Bloomington, Ill.



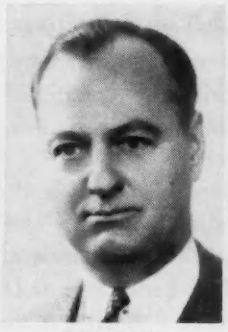
Personnel
R. J. FEGAN
Junction City, Kans.

Plant
M. S. BODINE
Jefferson City, Mo.

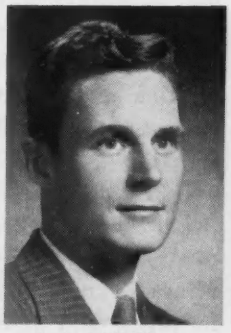
REA Borrowers
W. G. WINTERS
Houston, Texas

Small Companies
R. J. SCHAFER
Pinconning, Mich.

Traffic
D. A. PERIGO
Everett, Wash.



RAY BLAIN
Washington, D. C.
Subcommittee on
New Techniques
& Devices



F. S. BARNES, Jr.
Rock Hill, S. C.
Subcommittee on
Transmission & Protection

R. D. BENSON
New York, N. Y.
Subcommittee on
Liaison With A T & T
on Rates & Tariffs

L. W. CLEVELAND
Lincoln, Neb.
Subcommittee on
Special Services

P. M. FERGUSON, Jr.
Mankato, Minn.
Subcommittee on
Outside Plant

K. L. LAWSON
Lincoln, Neb.
Subcommittee on
Liaison With
Private Systems

CARL J. LOHMAN
New York, N. Y.
Subcommittee on Safety

R. J. LOVELAND
San Francisco, Calif.
Subcommittee on
Engineering Education

G. B. QUATMAN
Lima, Ohio
Subcommittee on
Inside Plant

W. H. TODD
Bellevue, Ohio
Subcommittee on
Mechanized Operator
Toll Ticketing

DR. NICHOLAS NYARADI

Annual meeting of the Independent Telephone Pioneer Association will be held on October 11 at Chicago's Conrad Hilton Hotel. ITPA President Berney Simner will preside.

THE ANNUAL meeting of members of The Independent Telephone Pioneer Association (ITPA) will be held in the Conrad Hilton Hotel's Grand Ballroom, Tuesday afternoon, October 11. The meeting will convene at 1:30 p.m. and all Pioneers are urged to be present. President Berney Simner will preside at the meeting.

Mrs. Mayme Workman will present the executive secretary and treasurer's report. Chairmen of the various committees will also present their reports for the fiscal year ending September 30, 1960.

John Brown Cook and the members of the Annual Meeting and Entertainment Committee of the ITPA have selected Dr. Nicholas Nyaradi for their feature speaker.

Dr. Nyaradi is director of the Institute of International Studies at Bradley University and before coming to America was Minister of Finance of Hungary. Dr. Nyaradi's subject, "Free Enterprise or Disaster," should be timely and of interest to all attending the USITA Convention.

Dr. Nyaradi, born and educated in Hungary, but now an American citizen, received two doctor degrees from the Royal Hungarian University of Budapest, one in political sciences and another in law. He was a member of the Budapest bar for 13 years and also the legal advisor and executive director of one of the largest banks in Hungary.

Having participated in the anti-Nazi underground movement in Hungary during World War II, he was asked by the anti-Communist Small Landholders' party to accept a position in Hungary's postwar coalition government. He represented the Small Landholders' party first as Under-Secretary of the Treasury and then as Minister of Finance until 1948 when, as a consequence of the increasing Soviet pressure, he and his wife fled their native country.

Since coming to the United States, Dr. Nyaradi has written several articles for leading newspapers and

President
BERNEY SIMNER
St. Louis, Mo.

Vice President
K. L. LAWSON
Lincoln, Neb.

Vice President
F. H. MacGOUGAN
Monrovia, Calif.

Exec. Sec.-Treas.
MAYME WORKMAN
Springfield, Ill.

Asst. Sec.-Treas.
SOPHIA K. DAVIS
Springfield, Ill.

AD ADDRESS PIONEERS

By DICK REYNOLDS

magazines, among them the *Saturday Evening Post* and *Fortune Magazine*, the Scripps-Howard newspapers and the International News Service. His book, "My Ringside Seat in Moscow," not only was acclaimed by leading reviewers as one of the best books ever published on Russia but also was commended as an outstanding

All members of the Independent Telephone Pioneer Association, and men and women attending the USITA Convention are cordially invited to attend the Pioneer meeting on Tuesday, October 11 at Chicago's Conrad Hilton.

antisubversive document by the National Americanism Committee of the American Legion. Several of Dr. Nyaradi's articles and speeches were also inserted into the *Congressional Record*.

Dr. Nyaradi has a unique and profound knowledge about the Soviet Union as he spent seven months in Moscow negotiating a Russian reparation claim against Hungary. During these conferences he came to know more Soviet Politburo members than practically any other statesman or diplomat. He is also well acquainted with many leading personalities in the United States, in Europe and in the Middle East.

Dr. Nyaradi has also established himself as an educational and civic leader in the United States. He is the Director of the Institute of International Studies at Bradley University. He also made many appearances on behalf of the Crusade for Freedom from which he has received two citations for outstanding work. He was also invited to Munich, where he was thoroughly briefed on the organization and operations of Radio Free Europe. For his work in connection with Hungarian relief activities, he has received a diploma of appreciation from the American Red Cross signed by its honorary chairman, President Eisenhower.

Dr. Nyaradi has also been consulted at different occasions by various government agencies and congressional committees. During his frequent trips abroad and through his friendly contacts with leading personalities overseas, he follows closely the political and economic developments in several critical areas of the world. His

DR. NICHOLAS NYARADI, director of the Institute of International Studies at Bradley University, will address the annual meeting of the Independent Telephone Pioneer Association on Tuesday, October 11, in the Grand Ballroom of Chicago's Conrad Hilton Hotel. Dr. Nyaradi's book, "My Ringside Seat In Moscow," has been acclaimed as one of the best books ever published on Russia.

name is listed in *Who's Who in America*, *Who's Who in American Education*, and *International Who's Who*.

Pioneers and their families and all men, women and their guests in attendance at the USITA Convention are cordially invited to attend the Pioneer meeting and hear Dr. Nyaradi, who will be presented immediately following the IPTA business session in the Grand Ballroom.

Immediately following Dr. Nyaradi's address, the ITPA Board of Directors, including the newly elected directors, will hold their annual meeting, in the Pioneer Headquarters, Room 535-A at the Conrad Hilton.

PROGRAM

for the

63rd Annual Meeting

of the

UNITED STATES INDEPENDENT TELEPHONE ASSOCIATION

The Conrad Hilton

Chicago, Illinois

October 9-10-11-12, 1960

Registration ..... Astoria Room (3rd Floor)
(Opens at 10 a.m., Sunday)

REA Borrowers' Conference
Sunday 2 p.m., Parlor B, Williford Room

Meeting of State Association Secretaries
Sunday 6 p.m., Private Dining Room No. 2

Accounting Conference ..... Monday 10 a.m., Lower Tower

Commercial Conference ..... Monday 10 a.m., Beverly Room

Engineering Conference ..... Monday 10 a.m., Waldorf Room

General Session ..... Monday 2 p.m., Williford Room

Plant Conference ..... Tuesday 10 a.m., Waldorf Room

Traffic Conference ..... Tuesday 10 a.m., Beverly Room

Pioneers' Meeting ..... Tuesday 1:30 p.m., Grand Ballroom

Annual Banquet and Entertainment
Tuesday 7:30 p.m., Grand Ballroom

General Session ..... Wednesday 10 a.m., Williford Room

U-S-I-T-A Secretary's Office
Private Dining Room No. 3 (3rd Floor)

Sergeants-at-Arms at General Sessions
Mr. Hamilton A. Cunningham
Mr. J. B. Haley
Mr. Keith W. Vogt

SUNDAY, OCTOBER 9

10:00 a.m.

REGISTRATION — Astoria Room (3rd Floor)

2:00 p.m.

REA BORROWERS' CONFERENCE
Parlor B, Williford Room
Mr. W. G. Winters, Presiding

GREETINGS FROM THE U-S-I-T-A
Mr. Foster B. McHenry, President

REPORT OF REA BORROWERS' COMMITTEE
Mr. Harris G. Allen, Committee Secretary

THE IMPERATIVES OF PUBLIC SERVICE
Mr. D. B. Corman
South Central Rural Telephone Cooperative Corp., Inc., Glasgow, Ky.

INDUSTRY COHESION AND COOPERATION
Mr. Harold C. Ebaugh
Triangle Telephone Cooperative Association, Inc.
Havre, Mont.

SOME POINTERS IN ACHIEVING GOOD MANAGEMENT
Mr. J. K. Galloway
The Winter Park (Fla.) Telephone Co.

PUT THEM ON THE LINE
Honorable David A. Hamil, Administrator
Rural Electrification Administration
Washington, D. C.

MONDAY, OCTOBER 10 — MORNING

10:00 a.m.

ACCOUNTING CONFERENCE
Lower Tower
Mr. W. H. Todd, Presiding

GREETINGS FROM THE U-S-I-T-A
Mr. C. C. Pearce, Vice President

REPORT OF ACCOUNTING COMMITTEE
Mr. W. H. Todd, Chairman

MARK SENSE TOLL — PROBLEMS IT HAS CREATED AND SOLVED FOR THE ACCOUNTING DEPARTMENT
Mr. Douglas Smith
General Telephone & Electronics Corp.
New York, N. Y.

RESPONSIBILITY ACCOUNTING
Mr. James R. DePauw
Arthur Andersen & Co., Chicago, Ill.

RECENT AND POSSIBLE FUTURE CHANGES IN TELEPHONE ACCOUNTING
Mr. Donald MacEachern
American Telephone & Telegraph Co.
New York, N. Y.

MONDAY, OCTOBER 10 — MORNING

10:00 a.m.

COMMERCIAL CONFERENCE
Beverly Room
Mr. Kenneth L. Lawson, Presiding

GREETINGS FROM THE U-S-I-T-A
Mr. Frank G. LaPrade, Vice President

REPORT OF COMMERCIAL COMMITTEE
Mr. Kenneth L. Lawson, Chairman

DDD WITH SPECIAL EMPHASIS ON COMMERCIAL FEATURES
Mr. Paul H. Kaufman
Northern Ohio Telephone Co., Bellevue, Ohio

COMMERCIAL ASPECTS OF ALL NUMBER CALLING
Mr. D. A. Perigo
West Coast Telephone Co., Everett, Wash.

THERE'LL "NEVER!" BE ANOTHER YOU
Mr. William "Bill" Gove
Pres., The Bill Gove Organization, Coral Gables, Fla.

MONDAY, OCTOBER 10 — MORNING

10:00 a.m.

ENGINEERING CONFERENCE
Waldorf Room
Mr. A. A. Wilson, Presiding

GREETINGS FROM THE U-S-I-T-A
Mr. Foster B. McHenry, President

REPORT OF ENGINEERING COMMITTEE
Mr. A. A. Wilson, Chairman

ENGINEERING CONSIDERATIONS IN PLANNING CENTRAL OFFICE LOCATIONS
Mr. Carl Hanenburg
West Coast Telephone Co.
Everett, Wash.

COMMUNICATIONS NETWORK PLANNING
Mr. B. H. Pryor
General Telephone Co. of Calif.
Santa Monica, Calif.

A VIEW OF THINGS TO COME
Mr. W. A. Stevens
American Telephone & Telegraph Co.
New York, N. Y.

MONDAY, OCTOBER 10 — AFTERNOON

2:00 p.m.

GENERAL SESSION
Williford Room

CALL TO ORDER
Mr. Clyde S. Bailey, Executive Vice President

USITA — KEYSTONE OF INDEPENDENT TELEPHONY
Mr. Foster B. McHenry, President

REPORT OF THE TREASURER
Mr. Carl D. Brorein

CAVE MAN TO SPACE MAN
Mr. J. Lewis Powell
Nationally known Author and Lecturer
Washington, D. C.

ANNOUNCEMENTS

APPOINTMENT OF NOMINATING COMMITTEE
Mr. Merle M. Hale, Lincoln, Nebr., Chairman
Mr. Donald F. Anderson, Geneseo, Ill.
Mr. Carl D. Brorein, Tampa, Fla.
Mr. R. E. Rudolph, Ellensburg, Wash.
Mr. Robbins Tilden, High Point, N. C.
Nominating Committee will meet in Private Dining Room No. 1, Third Floor, immediately following this session to receive recommendations.

TUESDAY, OCTOBER 11 — MORNING

10:00 a.m.

PLANT CONFERENCE
Waldorf Room
Mr. M. Stapleton Bodine, Presiding

GREETINGS FROM THE U-S-I-T-A
Mr. C. C. Pearce, Vice President

REPORT OF PLANT COMMITTEE
Mr. M. Stapleton Bodine, Chairman

TRANSMISSION OBJECTIVES FOR LOCAL SUBSCRIBER LOOPS
Mr. Robert Davis
Telephone Services, Inc.
Lima, Ohio

THE USE AND MAINTENANCE OF EXCHANGE TRUNK CARRIER
Mr. C. D. Hansel
GT&E Service Corp.
New York, N. Y.

THE ECONOMIES OF LINE CONCENTRATORS
Mr. Robert C. Hunt
Blair Telephone Co.
Blair, Neb.

TUESDAY, OCTOBER 11 — MORNING

10:00 a.m.

TRAFFIC CONFERENCE
Beverly Room
Mr. D. A. Perigo, Presiding

GREETINGS FROM THE U-S-I-T-A
Mr. Frank G. LaPrade, Vice President

REPORT OF TRAFFIC COMMITTEE
Mr. D. A. Perigo, Chairman

TRAFFIC LOOKS AT PERSON, COLLECT, AND SPECIAL SERVICE DDD
Mr. John B. Noggle
Virginia Telephone & Telegraph Co.
Charlottesville, Va.

THE IMAGE OF THE TELEPHONE OPERATOR
Dr. Walter M. North
Knox College
Galesburg, Ill.

THE LONG RANGE FUNCTIONS OF THE TRAFFIC DEPARTMENT
Mr. William A. Kern
Rochester Telephone Corp.
Rochester, N. Y.

TUESDAY, OCTOBER 11 — AFTERNOON

1:30 p.m.

INDEPENDENT TELEPHONE PIONEER ASSOCIATION
Grand Ballroom
Mr. Berney Simner, President, I-T-P-A, Presiding

BUSINESS SESSION
Report of Executive Secretary and Treasurer, Mayme Workman

FREE ENTERPRISE OR DISASTER
Dr. Nicholas Nyaradi, Director, Institute of International Studies at Bradley University — Former Minister of Finance of Hungary

ANNUAL U-S-I-T-A BANQUET
GRAND BALLROOM, THE CONRAD HILTON
7:30 p.m., TUESDAY, OCTOBER 11
DRESS — INFORMAL

WEDNESDAY. OCTOBER 12 — MORNING

GENERAL SESSION
Williford Room
President Foster B. McHenry, Presiding

REPORT OF NOMINATING COMMITTEE
Mr. Merle M. Hale, Chairman

THE GREAT ELECTRONICS FUTURE IN TELEPHONY
Mr. Don G. Mitchell, President
General Telephone & Electronics Corp.
New York, N. Y.

PRESENTATION TO OUR RETIRING PRESIDENT
Remarks by Mr. Hugh A. Barnhart

HOW TO BE A COBALT BOMB
Dr. A. D. Holt, President
The University of Tennessee
Knoxville, Tenn.

CLOSING ANNOUNCEMENTS BY THE PRESIDENT

ORGANIZATION MEETING
BOARD OF DIRECTORS
BEVERLY ROOM
(MEETING TO BE HELD IMMEDIATELY UPON ADJOURNMENT OF CONVENTION)

USITA CONVENTIO

THE FOLLOWING manufacturers and suppliers will have exhibits at the 1960 USITA Convention, October 9-12, Conrad Hilton Hotel, Chicago. Exhibits of the manufacturers and suppliers serving the telephone industry will occupy the 5th and 6th floors of the Conrad Hilton Hotel during the USITA Convention. (This list includes exhibitors reported by USITA on Sept. 21, 1960.)

Exhibitors	Room
Acme Visible Records, Inc.	519A-520A
Addressograph, Multigraph Corp.	Parlor 25, 522
Airtronics International Corp.	626A
Altec Lansing Corp.	623A
Anaconda Wire & Cable Co.	659
Ansonia Wire & Cable Co.	Parlor 29, 547
Audichron Co., The	635A, 636A
Automatic Electric Co.	504-505-507-509-602-610
Bashlin Co., W. M.	530A
Benner-Nawman, Inc.	Parlor 27, 545
Berry & Co., L. M.	556A
Bohnsack Equipment Co.	633A
Brand-Rex Division	637A
Buckeye Telephone & Supply Co.	532A
Budelman Electronics Corp.	656A
Cable Spinning Equipment Co.	556
C & D Batteries, Inc.	536
Clifford, T. A.	614A-615A
Collins Radio Co.	661A
Commercial Electric Co.	612
Communication Equipment & Engineering Co.	524A
Comptometer Corp.	624A
Cook Electric Co.	539A
Copperweld Steel Co.	542A
Dahl Co., George W.	641A
Electric Specialty Co.	609A
Electric Storage Battery Co.	517A
General Electric Co.	632
General Machine Products Co., Inc.	647
General Telephone Directory Co.	601
Gladwin Plastics, Inc.	628-629
Gould National Batteries, Inc.	537A
Graybar Electric Co., Inc.	617-618
Hayes Aircraft Corp.	Parlor 26, 523
Henkels & McCoy	657A
Hirsch Organization, Gustav	557A
Hopfield Industrial Mfg. Co.	633
Hughey & Phillips, Inc.	639A
International Business Machines Corp.	553
International Teletronics, Inc.	654A
ITT Kellogg	500-501-502
Jet Line Products, Inc.	652
Johns-Manville Sales Corp.	553A
Leich Sales Corp.	512-513-557
Lindsay Telephone Supply Co.	617A
Lorain Products Corp.	515A
Lynch Communication Systems, Inc.	619-620
McCabe-Powers Auto Body Co.	548A
Minnesota Mining & Mfg. Co.	635
Mosler Dropository Corp., The	626
Motorola Communications & Electronics, Inc.	661
National Standard Co.	526A
National Telephone Supply Co.	550A
Northeast Electronics Corp.	652A
North Electric Co.	604A, 605A, 607A, 609A
Onan & Sons, Inc., D. W.	655A
Panhandle Electric Sales, Inc.	654A
Petersen Engineering Co., Inc.	639

HIBITORS . . . .

Phelps Dodge Copper Products Corp. 634A
Plastic Wire & Cable Corp. 657
Preformed Line Products Co. 614
Puregas Equipment Corp. .....Parlor 24, 521

Ramset Fastening System 616A
Rawlplug Company, Inc., The 636
Raytheon Co. 551A-616
Recordak Corp. 659A
Reliable Electric Co. 512A-513A
Remington Rand, Inc. 544A
Ryan Mfg. Co., F. B. 621

S & G Mfg. Corp. 622
Schauer Mfg. Corp. 537
Secode Corp. 622A
Sherron Metallic Corp. 560
Sloan, Cook & Lowe 634
Stainless, Inc. 651
Stromberg-Carlson Co. 504A-505A-507A-509A
Superior Cable Corp. 653-655
Suttle Equipment Corp. 529-533-561A-611A

Tel-E-Lect Products, Inc. 612A
Telephone Engineer Publishing Corp. 560A
Telephone Repair & Supply Co. 516
Telephony Publishing Corp. 533A-534A
Tele-Wire Supply Co., Inc. 549
Thornhill Publishing Co. 611
Tower Construction Co. 658A

United States Instrument Corp. 619A-620A
United States Motors Corp. 602A
Universal Controls Corp. 631A
USITA-REA Borrowers' Committee 650A

VariType Corp. 625

Warren Manufacturing Co., Inc., The 637
Whitney Blake Company 534
Winton Products Co. 622
Wyoming Valley Equipment Co. 613A

* * *

Independent Telephone Pioneer Assn. 535A-536A

THE highlight of a year of great activity in the communications field is rapidly approaching. After months of thought and preparation the 63rd Annual Convention of the United States Independent Telephone Association will be held at the Conrad Hilton Hotel in Chicago October 9, 10, 11 and 12. There is every indication that this national convention will be outstanding not only in attendance but in interest to telephone people — so much so that I feel this meeting is a "*must*" for every progressive telephone man and woman who is in any way responsible for the advancement of his company.

With the new developments of communication equipment, mechanical changes, and improvements, the manufacturers' exhibits and others will be bigger and better than ever. The halls of the fifth and sixth floors of the Conrad Hilton Hotel will be teeming with telephone people going in and out of these exhibit rooms. I would be remiss if I failed to remind you of the hospitality programs also featured by the manufacturers.

You will enjoy the splendid array of well-known speakers provided for the general sessions.

You will enjoy the highly interesting group sessions led by qualified members of our industry. The meetings of your choice may be selected from the engineering, traffic, plant, accounting, commercial and REA borrowers' sessions.

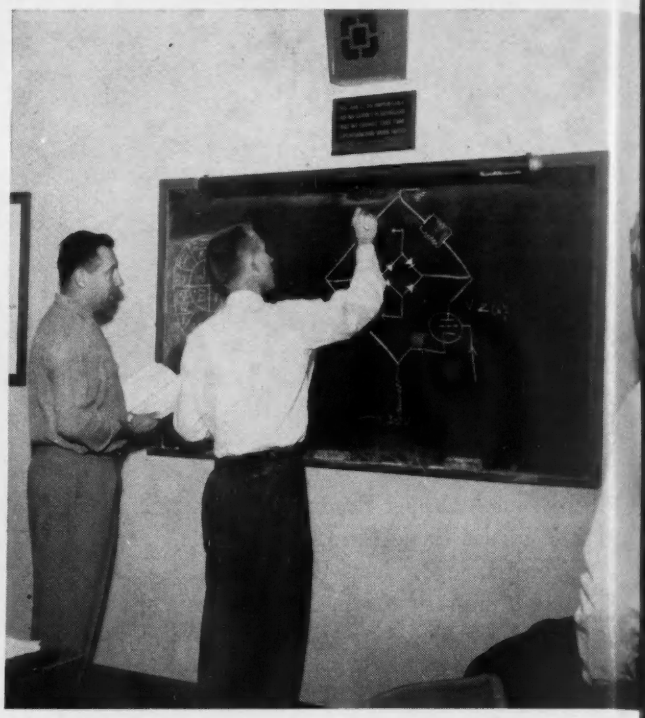
You will enjoy the special entertainment presented by the Independent Telephone Pioneer Association on Tuesday afternoon following its annual meeting.

I especially urge you to attend the banquet on Tuesday night and join with hundreds of your telephone friends in celebrating a climactic end to a year of splendid progress in our telephone industry.

On behalf of the officers, board of directors, their committees and the Washington staff I invite you to attend this annual convention.

Sincerely yours,
Foster B. McHenry,
President,
United States Independent
Telephone Association.

The meetings you attend are an important and necessary part of the American way of voluntarily getting things done that need to be done.



Telephone meetings are the most economical and productive methods of becoming informed on recent trends, techniques, and new products and equipment.

How To Get Your Money's Worth From Telephone Meetings

By T. DeWITT TALMAGE

The best methods for "bringing home the bacon" from a telephone meeting — large or small — are described in this guide to proven principles and tested techniques.

BEFORE you read one-half of this discussion it will be clear why the answer to the following perplexing question is pertinent. More than that, it is necessary to include the following question and its associated answer because together they succinctly reveal a basic working philosophy that cannot be ignored or omitted from any practical treatment of this subject which concerns all of us in one way or another.

Question: What decision is made more often by more people — including telephone people — on a greater variety of subjects than any other type of decision on the face of this earth?

The astonishing thing about the answer to this curious question is not that the answer contains another question, but rather the inconclusive way that the question included in the following answer is too often answered!

Leaving all further whimsical comments behind us, let's get down to business and take a serious look at the answer to this intriguing, riddle-like question.

Answer: The world's most frequently made decision is that required to arrive at the answer to the age-old question, "Is it worth the price?"

In fact, you just made such a judgement yourself when you decided to take time to read this article!

That is, you decided that what you stood to gain by learning how to get greater measurable benefits from

The greatest measure of success for any meeting is based on the degree of planning undertaken by the participant or delegate before he arrives at the meeting.

Adequate advance planning and preparation are two of the principal mainstays in any action aimed at "bringing home the bacon" from industry-sponsored conventions.

attending your next telephone meeting would be worth the 10 minutes of your time that is needed to read this explanation. If this was the essence of your decision, then you are on the right track because what follows is a description of methods that have been used to good advantage to resolve the challenge posed in this article's title.

We all know that decisions are often hard enough to make when tangible things are involved. Generally, decisions are more difficult to reach when intangibles must be considered. Nevertheless, in spite of this apparent awkwardness, it is recognized that specific ideas are often acquired at meetings which can be applied directly, with substantial benefits realized.

Most of the principles outlined in this article are broad enough to be used universally to increase the level of all types of beneficial results regardless of their relative individual importance.

Furthermore, these same principles, simple as you will find them to be, have been the catalytic agent which generated measurable results by charting a plan of action and implementing the way to exploit to the fullest the opportunities that telephone meetings afford. For one expecting to attend his or her first telephone meeting — regardless of the size of the meeting — knowledge of these principles is indispensable for the most satisfactory experience.

As you read steadily along and progress toward this article's conclusions, it will become more and more apparent that possibilities always exist for an additional degree of system and organization to be injected into each one's convention-going methods and habits — no matter how experienced he or she may be.

However, before examining these guiding principles, many of which are regularly used by astute convention-goers, let's take a quick look at several facets of this general problem — and your specific part of it — in order to put it into better perspective.

Meeting Attendance Is An Investment

FIRST FACET: — Recently it has been revealed that close to three billion dollars are spent annually in this country for holding large meetings such as the 63rd convention sponsored by the United States Independent Telephone Association, which is on our calendar's horizon from October 9 to 12, 1960, inclusive.

Second Facet: — It has been estimated that those who will attend and take part in telephone meetings at the district, state, and national levels in an average year's time will account for only about four-hundredths of one percent of the total that is spent for all meetings held that year in the United States.

Third Facet: — This small fraction of one percent may sound like a drop in the bucket or the budget to some but when this expenditure is reduced to a per person or a per company basis, it represents an *investment* of rather interesting proportions.

Fourth Facet: — In addition to the obvious fact outlined in the Third Facet, there is another elemental item needed to complete the investment side of this analysis. That is, we must take into consideration a matter that is not always one of secondary concern, namely, the amount — and the value — of the working

Please turn to page 96

There cannot be many businesses where more is done by the big companies to keep the little companies profitable.

TELEPHONE CONVENTIONS AND HE

The best medium for helping the numerous "little" Independents to stay numerous and Independent, efficient and profitable, and prepared for this era of technological change, is the state telephone association, and the best recruiting ground is the annual telephone convention.

AT A MEETING of secretaries of the State Independent telephone associations, convention attendance and the interest displayed by the association members was discussed. The consensus was that those who had most to gain by taking part in conventions usually failed to attend.

The secretaries referred to the men who run the little companies, operating a few hundred stations, often with outmoded plant, at subnormal rates that cannot bring profit.

Many of these little companies do not even join their state associations. Many more who do join take no active part and seldom attend a meeting or convention. Yet what they could gain from active participation in association work and thought could make all the difference between failure and continued operation in profitable response to the challenge of the future.

It is true that 45 percent of the Independent companies have dropped out during the last 20 years, by failure, merger or sale to larger concerns, but that is not neces-

From the large association to the smallest, the motif remains the same: Help the little company.

HE LITTLE COMPANY

By L. A. GRITTEN

sarily a continuing process. Certainly it is not written on the wall that all small companies must fail and fall merely because they are small.

J. T. Naylor, vice president of the International Telephone & Telegraph Co., whose wide experience ranges from successful personal ownership of a little company to operation of some of the largest, has this to say: ". . . . the merging trend has been primarily for another basic reason . . . in one or another of the various aspects of the business, courage and determination have waned in meeting the competition in the game."

Probably nothing fortifies that essential courage and determination so greatly as the know-how and cumulative experience to be gleaned from one's business associations.

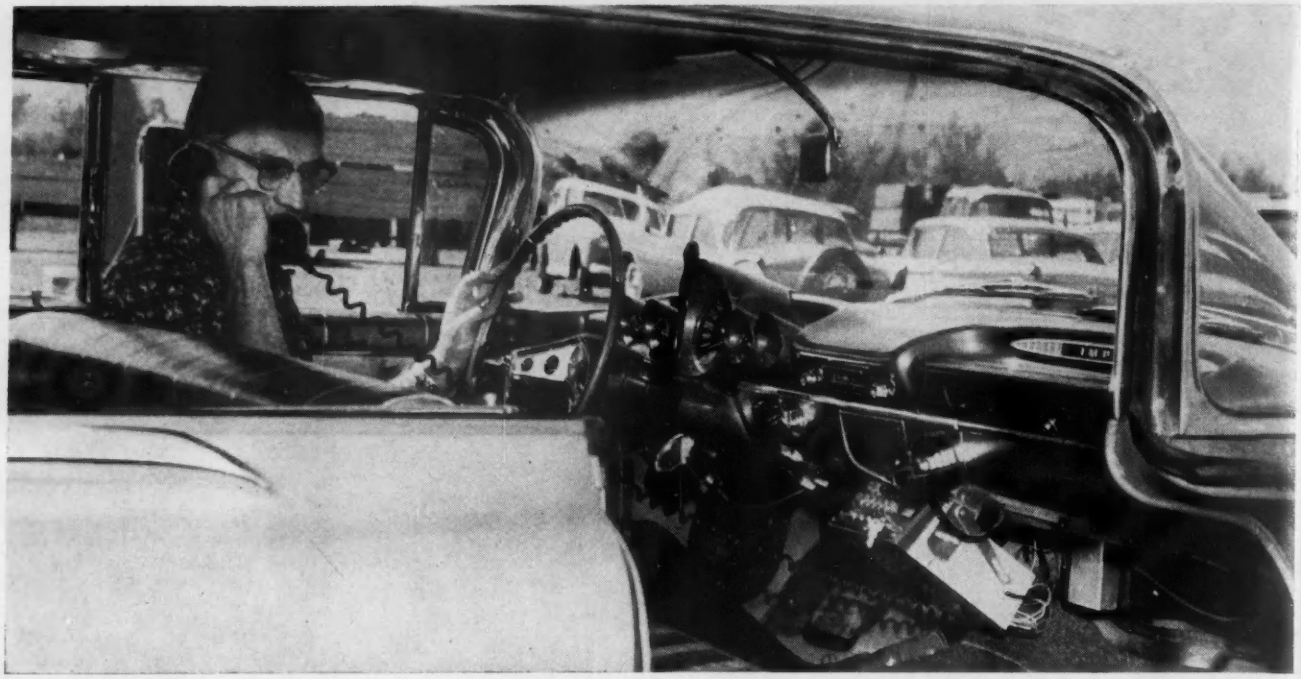
The "Little Independent"

WHERE does the "Little Independent" stand numerically? In 1959, of 3,446 Independent companies, 180 operated fewer than 50 telephones; 1,085 operated from 50 to 250 telephones; 788 operated from 250 to 550 telephones; 345 operated from 550 to 850 telephones. Those figures suggest that there are some 2,000 companies whose size makes their survival a problem depending upon their will to do what survival entails in this era of automation and technological change.

In certain states small telephone companies are few. In three states, Arizona, Massachusetts and Rhode Island, there are only six companies with fewer than 1,000 stations; and there are none at all in Connecticut, Hawaii, Maryland, New Jersey and New Hampshire. States with a heavy load of little ones include Illinois, Iowa, Kansas, Minnesota and Missouri. In those five states there are nearly 800 companies under the 1,000-station mark.

How modern is the equipment of these companies? Obsolescent equipment is not confined to the little fellow, but these figures may offer a rough answer: In 1959 there were still 300,000 magneto telephones and

Please turn to page 108



A subscriber makes a call on his pushbutton radiotelephone unit. Buttons corresponding to the slots on a home phone "spin" dial are pressed in proper sequence to call the number of the party desired. The base station equipment receives the resulting tone signals and converts them to dial pulses which are applied to the dial exchange line.

OREGON COMPANY INSTALLS MOBILE DIAL TELEPHONE SYSTEM

By JAMES W. DAMON*

THIS IS big country in Eastern Oregon . . . big country with tall mountains overshadowing narrow picturesque valleys. Our population is not dense and is sometimes difficult to serve, and for this reason we were immediately interested when the automatic dial radiotelephone was introduced. We have long recognized the value of this new concept in filling the needs of potential subscribers in isolated locations as well as its value as a mobile telephone.

In November, 1959, we installed what has been described as the first dial radiotelephone system west of the Rocky Mountains. True to our thinking, it has proven to be an asset to our operations by supplementing the present methods of subscriber service and filling the gap to provide over-all coverage of our service area.

Our four dial exchanges serve an area some 67 miles long, and the basic economy is derived from the cattle and lumber industries. While most of the sawmills are located near our Mt. Vernon exchange, we have found a good market in the logging operations that are scattered throughout the mountains. Even in those instances where the mills have their own two-way dispatch type radios, they are using our units in the vehicles of their foremen and executive personnel to give direct access to the telephone exchange.

We have two units installed in our company vehicles, and because of our wide operating area, we have found the units provide an economical method for dispatching our men to a trouble area. On numerous occasions we have been able to stop our truck on its way back to headquarters and have our employes handle a recently reported case of trouble.

A word of caution here. We, as a telephone company, should ever be aware that any time a company call is

**Mr. Damon is pres.-mgr., Oregon Tel. Corp., Mt. Vernon, Oregon.*

made, we are in competition with our paying customers for the use of the frequency. We feel employes should be cautioned never to use the radio for other than necessary business and, unless it is an emergency, never vie for its use with our customers.

Locating Potential Users

IN MAKING our initial survey of potential mobile subscribers we chose those from our area that we felt had a real need for radiotelephone service. We were careful to avoid people who would be tempted to sign up for service simply because of its novelty. We advertised the service heavily, and had a three-day demonstration display at our county fair. We experienced an enthusiastic reception and from this we were able to add people we had previously overlooked to our list. Each prospect was personally contacted and advantages of the service as well as the estimated coverage were outlined.

Lumbermen as well as operators of gasoline bulk plants in particular were contacted. Doctors should be considered good prospects. However, modern clinics and hospitals springing up throughout our country and more and better methods of travel confine them more to their offices and consequently make them poorer prospects for this type of service.

Police agencies, particularly in smaller communities, are high on the list of prospects. Even though they may have their own two-way radio system, it is usually on an eight-hour basis, or when someone is in the office. With mobile dial service the police agencies, as well as people who may want to contact them, have 24-hour service with slight additional cost. Normally this additional cost is outweighted by the obvious advantages. There are many more prospects: veterinarians, ambulances, government agencies, etc.

I do caution telephone companies not to get overexuberant in selling mobile service. Radios put in today and taken out later, because the novelty has worn off or the need did not outweigh the cost, bring in little revenue sitting on the shelf. Also, when contacting potential customers, it is well to remember that the base station is tied to the central office equipment of a specific exchange. If an attempt is made to sell service to a person any great distance away, even though within the coverage of the base transmitter-receiver, every call he makes to his office or home may be a toll call. This same condition would also hold true if others call him. Obviously this could lead to a prohibitively expensive situation, especially in view of the fact that the rental itself is unavoidably high.

We require a one-year contract for each radio signed at the time of installation. This contract stipulates a monthly rental of $45 and an installation charge of $45. It is a relatively simple contract prepared with our attorney. It is not assignable, but includes a termination charge and provisions that in the event it must be transferred it becomes a new contract. It contains the usual liability clause for damage and interruption of service plus a stipulation that the radio may not be used by anyone else, or for any other purpose, than that assumed to be in the direct interest of the customer.

We carry an Inland Marine All Risk Floater Insurance Policy that covers all units. While it is generally conceded the insurance on any vehicle would cover the unit in case of damage by accident or otherwise, in order to make sure the insurance is always effective it would be necessary to have a list of insurance termination dates on the vehicles of every customer. It would then be necessary to follow these closely and check to insure renewal. Most Inland Marine Insurance is relatively inexpensive. Approximately $1.50 per month per unit protects a sizeable investment.

Antennas and Base Station

OUR antennas and base station are located on Mt. Vernon Peak at an elevation of 4035 feet. This is approximately 1500 feet above our valley floor. While mountains rise up on each side to elevations of nine

Please turn to page 59

Author JAMES DAMON, president-elect of the Oregon Independent Telephone Association, examines the control group, with its dust cover removed, in the Mount Vernon exchange.

Oregon Telephone's base station and two pole-mounted antennas are located at the 4,035 foot level on Mount Vernon Peak. The higher pole, 45 feet in the air, contains the transmitting antenna.

New Collins DC system insures uninterrupted communication...when you need it most!

Now... security against even momentary outages during power-disrupting storms. Collins' dc-powered Microwave and Carrier Systems operate directly from float-charged batteries — eliminating rotating machinery. The results: improved reliability, reduced power drain, lower maintenance, decreased noise and elimination of standby generators. Several voltage combinations are available, enabling you to select the one that best integrates with your existing plant. For technical literature, write Collins Radio Company, Texas Division Sales, 1930 Hi-Line Drive, Dallas 7, Texas.

See the Collins 11-15 kmc system with dc power at Room No.661A, USITA Convention, Chicago, Illinois, Oct. 9-12.

COLLINS MICROWAVE AND CARRIER

COLLINS

COLLINS RADIO COMPANY • DALLAS, TEXAS • CEDAR RAPIDS, IOWA • BURBANK, CALIFORNIA

"Mobile Dial System"

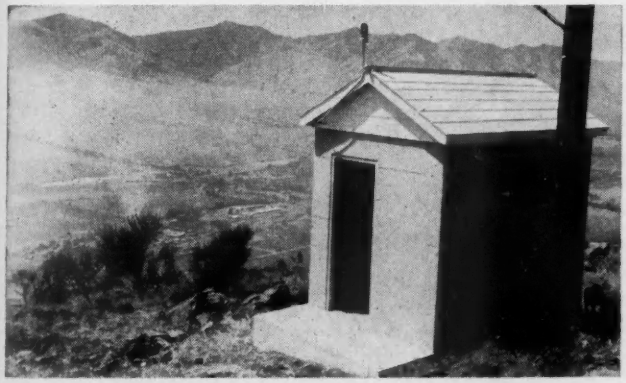
(Concluded from page 57)

and ten thousand feet, the presence of "obstacle gain" provides us with a good coverage up to 45 miles in radius. Beyond this we have areas that are spotty and on a few occasions we have had reports of fair communications up to 75 and 80 miles. Needless to say, we do not attempt to sell service on this basis. We do maintain that we can provide good service in the 45-mile radius, with a few exceptions for deep canyons and other areas with serious obstacles.

We have found that the presence of blank spots has not presented a subscriber problem from the standpoint of our mobile customers. After surprisingly little experience with the units, customers learn where they can and cannot call from. It must be remembered that I am speaking of mountainous country; this would not necessarily apply to flat terrain.

Safety Instruction

ANOTHER item that we feel is vitally important is safety, especially in mobile installations, where the operator has a tendency to use the instrument while



An 8′ x 10′ concrete block building contains the system's transmitter-receiver and an emergency power generator. It operates unmanned on a 24-hour per day basis.

traveling. Most states have laws prohibiting the use of a telephone while in a moving vehicle. Nevertheless, knowing human nature as it is, we have developed a short program of safety instruction.

For example, one item in our instruction concerns seizing the coiled cord of the handset in the center and tucking it under the leg before bringing the handset up to the face. This prevents the cord from becoming tangled in the steering wheel. There are many things which can be done along this line. I urge any telephone company offering mobile service to give safety instruction serious consideration. Furthermore, we have found customers appreciate this little extra touch. It shows you have an interest in them.

The Base Station

OUR system, which we purchased from Motorola, includes a standard base station with 50 watts of RF output on Mt. Vernon Peak. Two antennas are needed because of our dual frequency operation. We are using 6 db high gain antennas mounted on wood poles 35 and 45 feet in length.

The transmitter-receiver is connected to the control group in the central office by two pair of wires. Dialing from a mobile unit is accomplished by the transmitting of a series of tones. Different tone combinations are used for different numbers. These are received by the base station and sent over one of the wire loops to the control group in the central office, which is actually the "heart of the system." The tones are decoded by the control group and fed to the conventional dial equipment as dial pulses.

The reverse takes place for calls to the radio units. The ringing voltage from the exchange is converted by the control group into tone modulated radio signals. These are then transmitted to the units by the base station. Because of a special circuit in the receiver of each radio unit, selective ringing is maintained. Only the desired radio is signaled and can answer.

Our system was purchased with three loops, or lines, each of which will accommodate a 10-party subscriber line, enabling us to serve a total of 30 subscribers. Actually, the number of subscribers is limited because of the selective ringing feature of the central office equipment, rather than the ability of the control group to handle more radio units. While we don't have 30 subscribers at present, there is some question in our minds if we won't reach a practical limit, determined by public relations and subscriber acceptance, before we approach the maximum fill. This remains to be seen.

The vehicles or fixed stations themselves are not much different from a standard radio unit except that they employ a dial control head on which are mounted 11 pushbuttons. These are marked with letters and numbers in the conventional manner through the 10th or operator button. The 11th button is used for revertive calls and is simply depressed after the directory number has been dialed.

We have experienced very little difficulty in teaching our subscribers how to use the units. When they pick up the handset from the cradle, tones are automatically transmitted to the base station, a connection to the dial equipment is made and a dial tone is immediately present. The call then proceeds in the normal manner except buttons are depressed instead of spinning a dial.

Maintenance of our system is presently being handled through a contract with Motorola. Actual servicing is performed by Wheeler Communications Of The Dalles, Oregon, under subcontract. Operated by Bob Wheeler, the firm provides regular preventive and routine maintenance including any emergency servicing needed.

Just a passing thought in closing . . . we have never considered this service radio service and we emphasize this fact to all our potential and existing customers. The radio is simply a means to an end to provide the best in modern communications. We are offering the benefits of telephone service through an expanded marvel of electronics. — *James W. Damon.*

WHAT'S THE VALUE OF A FRIENDLY TELEPHONE VISIT?

Enormous, if the person you want to visit lives many miles away . . . if you're busy and don't have time to go traveling . . . or if, like the young mother featured in one of our current advertisements, you have a year-and-a-half-old little friend who needs your care and company at home.

Then your phone is a magic carpet for companionship, and the visits it takes you on are refreshing breaks in the day's routine.

Reminding folks of the friendly value of the telephone, and urging them to use it more, are continuing jobs of Bell System advertising which benefit *all* of America's telephone companies.

BELL TELEPHONE SYSTEM

COMMERCIAL DEPARTMENT NOTES

By ALLAN R. STACEY
Vice Pres., Sunland-Tujunga Tel. Co., Sunland, Calif.

RATE PACKAGING METHODS FOR PUSHBUTTON SERVICE

Three rate-packaging methods — (1) Deluxe Plan, (2) "Square" KTS Plan, and (3) the "Piecemeal" Plan — are used to develop rates for pushbutton service.

ONE OF the most rapidly growing portions of the service we offer to the public is key system telephone service, commonly called 1A1 Key Systems, KTS plans or pushbutton telephones. Telephone companies are finding strong customer demand for pushbutton telephones in small businesses, attorneys' offices, doctors' offices and the like. In the case of my own company, which is definitely a "bedroom" operation with only small businesses, pushbutton telephone demand has mushroomed. During the past five years over-all stations increased about 62% while pushbutton telephones increased 420%.

Features Of The Pushbutton Telephone

YOU will recall that a pushbutton telephone installation is made up of basic relay equipment through which we bring trunk lines (central office lines) and terminate them on individual telephone instruments which usually have six buttons. Most often the first button is a "hold" button and the other five can be used for terminating trunk lines or other purposes.

The pushbuttons are of transparent plastic material and arrangements can be made for individual lights to come on under each pushbutton. Further, the lights can be either steady to indicate that this particular line is busy or they can be flashing to indicate an incoming call on that line or button.

In addition, it is possible to have intercommunicating between pushbutton stations on the same system. Further, we can adapt for signalling between stations on the same system to facilitate transferring of incoming calls and intercommunication. KTS systems can also be arranged for dialing between stations on a single digit basis rather than signalling through the use of a button-buzzer system.

Now, let's put on our commercial man's rate-making hat and talk about the general rate structure for pushbutton telephone systems and three rate packaging methods.

General Rate Structure

IN DEVELOPING a rate structure for pushbutton telephones, there are four areas which we must consider. First, there is a charge for the basic relay equipment. Second, we need a rate for the trunk lines or central office lines. Third, there must be a price established for each pushbutton telephone station. Fourth, there may be a charge for signalling between these stations either by a button-buzzer arrangement or by dialing between stations on a one-digit basis.

Usually the first charge, for basic relay equipment, is based upon the number of lines and number of stations involved in the system requested by the customer. For example, a two-line, four-station system would have one monthly rate, possibly $7.50; a three-line, seven-station would have another rate, possibly $12.00; and a four-line, 12-station system would have still a different rate, possibly $14.50 for relay equipment.

The trunk lines, or central office lines, have a monthly rate per line which is sometimes the same as a business one-party service or residence one-party service, and at other times is the same as a PBX trunk line rate.

The pushbutton stations are usually priced on an individual basis, for example, $3.00 per station. This rate depends upon the features being provided in the instrument and here is where our problem arises. How shall we charge for the station instrument features of pickup, line holding, intercommunicating, line busy lamps and winking lamps? There are at least three methods of developing

rates for these features: The "deluxe" method, the "square" KTS plan and the "piecemeal" plan.

The Deluxe Plan

THE "deluxe" plan establishes a single rate for each pushbutton telephone station. Included in this rate are all of the features we have mentioned — pickup, hold, lamps and intercommunicating. All pushbutton telephones for a company using this rate structure are equipped to provide all of these services and the customer has them at his fingertips. He pays one rate and he receives the "deluxe" version.

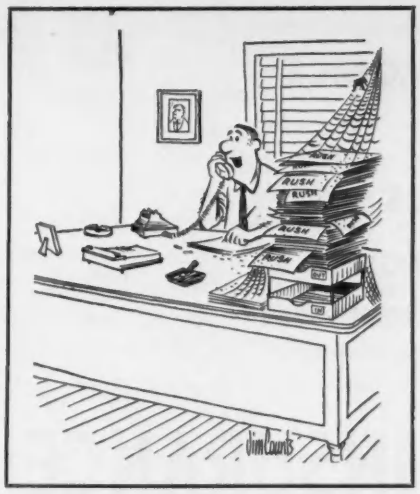
You can see that there are advantages to the telephone company in being able to standardize purchasing of key system equipment, standardize training of plant people, standardize training of commercial department people and generally to simplify the handling and understanding of pushbutton telephones throughout the company.

A possible disadvantage to this method is that a customer must take all the "extras" and we may find a few customers who feel they cannot afford the service because the price includes all features. To compromise and retain some advantages for the company and yet provide a somewhat less expensive system to the customer, there has been developed what is called a "square" plan of rate structure for key telephones.

"Square" KTS Plan

THE RATE used for a "square" system is determined by the number of lines and total stations, and includes the key features of pickup, holding, line holding, intercommunicating lines, combined line and busy lamps in varying degrees.

First, the "square" system categorizes the available packages by the number of lines and the number of stations. This produces four basic groups — two-line, three-line, four-line and five-line. The first group is all two lines and made up of stations from one through twelve stations. The second group is three lines made up of stations from one through twelve stations. The next two groups



"Now that the dial conversion is over, maybe we can get back to work."

are for four lines and five lines with up to twelve stations.

Within each line group we have four possible rate structures varying to the degree that the key features are included or excluded. For example, looking at the two-line group we find that a four-station system might cost the customer $7.00 per month and a six-station system might cost $10.00 per month. Both of these rates provide a minimum key system without extra features.

Should the customer desire a slightly more deluxe system with intercommunicating but no other features, the rates would move up to $10.00 for a two-line, four-station system and $14.00 for a two-line, six-station system.

Should the customer want intercommunicating and wink and busy lamps the price of the system would increase to $15.00 for a two-line, four-station layout. Should the customer want all of the features of hold, intercom, lights, etc., a two-line, four-station system would be $19.00 per month. Naturally, these rates are only illustrative.

"I found the trouble — she was dialing the complete prefix 'W-A-L-N-U-T'!"

You can see then what the "square" system does is to provide several basic packages which means that the customer has more choice by selecting the plan that will fit his needs and his pocketbook, but the telephone company has more inventory and training problems.

In the "deluxe" plan the customer had little choice; in the "square" plan he could choose from several packages. Now, let's look at a plan under which the widest choice is given to the customer. We call it the "piecemeal" plan.

The "Piecemeal" Plan

UNDER the "piecemeal" plan the customer orders each individual feature as it suits his desire. We may find, therefore, that if he has a two-line, six-station system, on three of these stations he will request hold and intercom, but no lights, and on two more of these stations he may request lights and hold, and on the remaining station he may have nothing more than the ability to pick up incoming calls without lights or indications.

Using the "piecemeal" plan we must price out every single item the customer orders. For example, we start with $1.00 for an extension telephone and add $.50 per month for a wink lamp, plus $1.00 per month for intercommunication, and so on. This is the ultimate in giving the customer every possible arrangement and also produces for the telephone company the largest number of problems in stocking the equipment and training the personnel and describing the service to the public.

If you have any questions regarding details on these tariff structures for key telephone plans, please let me know. Next issue we'll be talking about the profit in alphabetical bold type listings. — *Allan R. Stacey.*

SUB-HARMONICS and OVERTONES

By C. D. EHINGER
Pres., Citizens Telephone Co., Decatur, Ind.

DOES YOUR INSURANCE PROGRAM MEET YOUR COMPANY'S NEEDS?

The author reviews, in this article, the types of insurance his companies carry on plant and operations. What about your present coverage? Is it adequate? Is it overly expensive? See if you agree with this coverage plan.

I SUPPOSE that it doesn't matter what kind of job you have or exactly what you do — there are certain segments of any job or responsibility which a person seems to dread doing and puts off until the last moment. It would also be my guess that these segments fall into one of two categories; they are either those tasks which bore you to death by their very monotony or the ones in which you feel least competent.

I seem to be the owner of more than my share of tasks and responsibilities which I dislike performing and probably put off until I no longer have a valid excuse. Maybe I am just getting more lazy and perhaps I should have added *that* fault as a third reason that people sometimes dread certain tasks.

In any event, when it comes time for the annual review and appraisal of the insurance program for our companies, I know that this is *definitely* one of the tasks which I dread doing. I also know that the reason for this particular dread is my awareness of my incompetence when it comes to intelligently outlining and specifying a broad and general insurance coverage for the properties which comprise our companies.

"Few Of Us Are Experts"

FRANKLY, I haven't the slightest bit of misgiving concerning my shortcomings in this field. You and I, as managers, accountants, operators, commercial, maintenance and installation people in the telephone industry are active members in a field which is expanding so rapidly as to be breathtaking and, somewhat perversely, is requiring more and more specialization in increasingly narrow units of the over-all picture.

The insurance industry has also had a spectacular increase in its broadness of vision and concept. It has also grown to the point where it must have specialists in hundreds of the parts of the entire insurance picture. With this realization, I do not feel that you and I need have any special misgivings about the fact that we probably do not know a bit more about insurance than does the average person know about the telephone industry.

But therein lies a great difference. The average person can say to himself, "I want telephone service and know nothing about the intricacies of the telephone system. So what? I can walk down to the telephone office and tell them that I want a private line installed in my residence next Monday and they will take it from there and satisfy all of my needs and requirements."

"How Do We Determine Our Program?"

CAN I FEEL the same way when it comes to ordering and placing an insurance program to cover the needs of my telephone companies? Much as I hate to admit it, I am afraid that this line of reasoning could erroneously strike one blow in favor of monopolies. Would the average person desiring telephone service have the same feeling of confidence if there were eight or ten telephone companies in every community and he was faced with the necessity to make a selection of companies and type of service, etc.?

In any event, we have a moral and

legal responsibility to all who work for us, to all who invest in our companies, to all who are our subscribers, to all who comprise the community at large, to have over-all insurance programs which will adequately protect these various interests and, on the other hand, will not be money foolishly and unnecessarily spent.

In my particular case, I have taken full advantage of the fact that there are consultants available to advise any company concerning the best program which can be tailored to fit its particular needs. I have before me the annual report filed with us by this group and it might interest some of you to know the over-all plan and type of insurance which they feel best fits our needs.

"Types Of Coverage"

BRIEFLY, the types of insurance which we presently carry are:

(A) *Workmen's Compensation Insurance*: This is required by law, and we recently increased, under Coverage B, the limit for common law claims to $100,000. and additional medical coverage in the amount of $10,000. to supplement statutory benefits. The insurance also contains a Universal Endorsement.

(B) *Public Liability and Automobile Physical Damage*: Limits are in the amount of $150,000. for injury to one person, $500,000. for all injuries from one occurrence whether caused by general or automobile hazards, with an aggregate of $500,000 for completed operations insured under the products hazard. The property damage limit is $100,000. for each occurrence from either general or automobile hazards subject to an aggregate $300,000. for each property damage hazard insured. General property damage coverage is subjected to $50.00 deductible from the total of all sums payable to any one person in any one accident from damage or destruction of underground wires, conduits, sewers, etc. by excavating.

The policy insures owned automotive equipment for physical damage by perils of the comprehensive coverage to a stated amount for all vehicles except trailers, which are insured for damage by only fire, theft, or windstorm. Until last year, we did not feel that we could afford to carry collision insurance on our trucks but, within the last year, have changed to a one hundred dollar deductible clause for collision on any of our trucks.

(C) *Boiler Insurance*: Direct damage from an accident to a scheduled boiler, water-heater, or expansion tank is insured on a repair or replacement basis to a limit of $100,000. Furnace explosion is excluded for boilers.

You are invited . . . to tell TE&M authors your problems of department policy or procedure on which you'd like to have an opinion.

While we don't claim to have all the answers, we'll welcome the opportunity to discuss as many as possible in our columns.

(D) *Crime Insurance*: Insures loss from fraudulent or dishonest acts of employes, loss of money and securities inside or outside the premises, or loss of other property by safe burglary or robbery as well as by robbery inside or outside or theft from within the home of employes and forgery of issued negotiable instruments to a limit of $25,000 for each loss.

Loss or damage to records of accounts in connection with any other locations covered by the policy is included in the amount $2,500. Fidelity coverage covers loss from fraudulent, dishonest or criminal acts of any person appointed to accept payments on our account. (Collection agents.)

(E) *Business Interruption Insurance*: Insurance to cover loss of earnings resulting from damage or destruction of the property at specific locations under the gross earnings form but on an agreed amount. The insurance covers loss from fire, lightning, extended coverage perils, vandalism, and malicious mischief.

(F) *Insurance on Real and Personal Property*: This insurance covers all real and personal property on an all-risk basis. The insurance is subject to a 90 per cent co-insurance clause and a $500. franchise clause. It covers the normal causes of loss or damage consisting of fire, lightning, extended coverage perils, and other perils with certain acceptable exclusions. In addition, outside lines and poles are covered, under a special endorsement, from loss or damage by sleet, wind, tornado, snow and ice, subject to a $1,500. deductible from each loss. The co-insurance clause has been expressly waived as respects the coverage on outside lines and poles.

"You May Or May Not Agree"

AND those are the general lines which we use as a buffer against extraordinary and unforeseen happenings. It may well be that many of you will disagree with this over-all program. I know it to be a matter of fact that many of the larger telephone companies do not carry insurance on their buildings and contents on the premise that they can well afford to self-insure against any possible losses concerning these items.

This may be all well and good for the larger companies and is undoubtedly a matter which has been verified by past experience. However, in the smaller companies, even one loss can be catastrophic and I would personally feel that a company would need to be quite large in size, with properties scattered over a large geographical area, before such a policy could be mathematically sound.

Of course, we also carry a very complete and comprehensive type of health and accident group insurance program for all employes, but this, plus other fringe types of insurance, is an entirely different field. We will discuss this type of insurance in some future articles.

I know that many of you probably disagree with any or all of the statements contained in this article. I will sincerely appreciate your comments and, besides, maybe I can obtain some very worthwhile pointers from you. — *C. D. Ehinger.*

— 73 —

Any comments, criticisms, or suggestions for future topics? Address all correspondence to "Sub-Harmonics and Overtones," Telephone Engineer & Management, 7720 Sheridan Road, Chicago 26, Ill.

MORE CIRCUITS PER CABLE.
Anaconda High-Count cable contains up to 2727 pairs. More pairs mean maximum utility of existing ducts.

Now get more circuits in new and existing ducts with ANACONDA® High-Count cable

Up to 2727 pairs per cable—that's how Anaconda's HC cable makes possible much more efficient use of your duct banks. In many cases, no new ducts are needed—no new construction to pay for. Your existing duct system can hold more circuits, serve more subscribers and bring in more revenue with Anaconda High-Count cable.

The chart below sums up the basic facts on all types of Anaconda HC cable. For more specific information on any one type, write to Anaconda Wire and Cable Co., 25 Broadway, New York 4, New York. 60247

PHONE THE MAN FROM

ANACONDA®

FOR TELEPHONE CABLE

the independent manufacturer for the independent telephone industry

HIGH-COUNT CABLE

STALPETH

Conductor Size	Number of Pairs	Guaranteed Number of Pairs	Approximate Overall Diameter	Approximate Net Weight	Shipping Weight	Standard Reel Length
			inches	lb per M ft	lb per M ft	feet
19	556	556	2.97	5950	8430	700
22	1111	1111	2.96	5940	8400	700
24	1818	1815	2.96	6060	8530	700
26	2424	2418	2.89	5270	7750	700
26	2727	2721	3.04	5990	8470	700

PAPER-LEAD

Conductor Size	Number of Pairs	Guaranteed Number of Pairs	Approximate Overall Diameter	Approximate Net Weight	Shipping Weight	Standard Reel Length
			inches	lb per M ft	lb per M ft	feet
19	556	556	2.86	10,370	12,850	700
22	1111	1111	2.87	10,410	12,900	700
24	1818	1815	2.85	10,320	12,800	700
26	2424	2418	2.78	9,520	12,000	700
26	2727	2721	2.94	10,550	12,920	700

TRAFFIC LIGHTS

By D. A. PERIGO
General Traffic Supt., West Coast Tel. Co., Everett, Wash.

IS "POSITIVE LINE IDENTIFICATION" THE CURE FOR "UNIDENTIFIED CALLS"?

How much is it costing your company to handle the messages for which you do not get paid? Is "Line Identification" the proper cure?

IN THE July 1, 1960 issue of TE&M *Les Gritten* made a few comments in his "*Industry Observations*" about ways and means to cheat the telephone company saying "Some day we intend to write a pamphlet entitled: 'Fifty Ways to the Fifth Freedom.' It will never be published, but we expect to live in luxury on what Mother Bell and the larger Independents will pay us not to publish it."

To those of us who know Les so well, this is a typical *Gritteneese* statement. What he said was humorous — but many times over the years I heard my mother quote "Many a truth is spoken in jest."

Unfortunately there are many ways to cheat the telephone company and they are not all associated with coin boxes, slugs, etc. — but to write about them specifically (and every author hopes his material is widely read) may make the situation worse.

"*Traffic Lights*" in the September 15 issue of TE&M called attention to the problem of Person traffic and mentioned "third number" and credit card calls as well as plugging for positive line identification on toll calls. We didn't dare go into the details — but you can get the details in your own company. Just have your commercial and traffic employes read the article, then ask them about some of the things that go on in your company.

"Self Service"

TODAY various businesses are being operated on a "self service basis" — including our own, with customer toll dialing — but so far we haven't heard of a bank operating on a self service plan. (There have been cases where customers helped themselves but the bank didn't plan it that way.) Now just suppose the bank management says "You are a trusted customer. Any time you want some money, just walk to the vault, take what you want and leave your signed note."

It sounds funny, doesn't it? But I'd be willing to bet that any bank manager can name at least one customer to whom such privileges could be safely extended. The plan could grow with others using it, and still without loss — but eventually everyone knows what would happen.

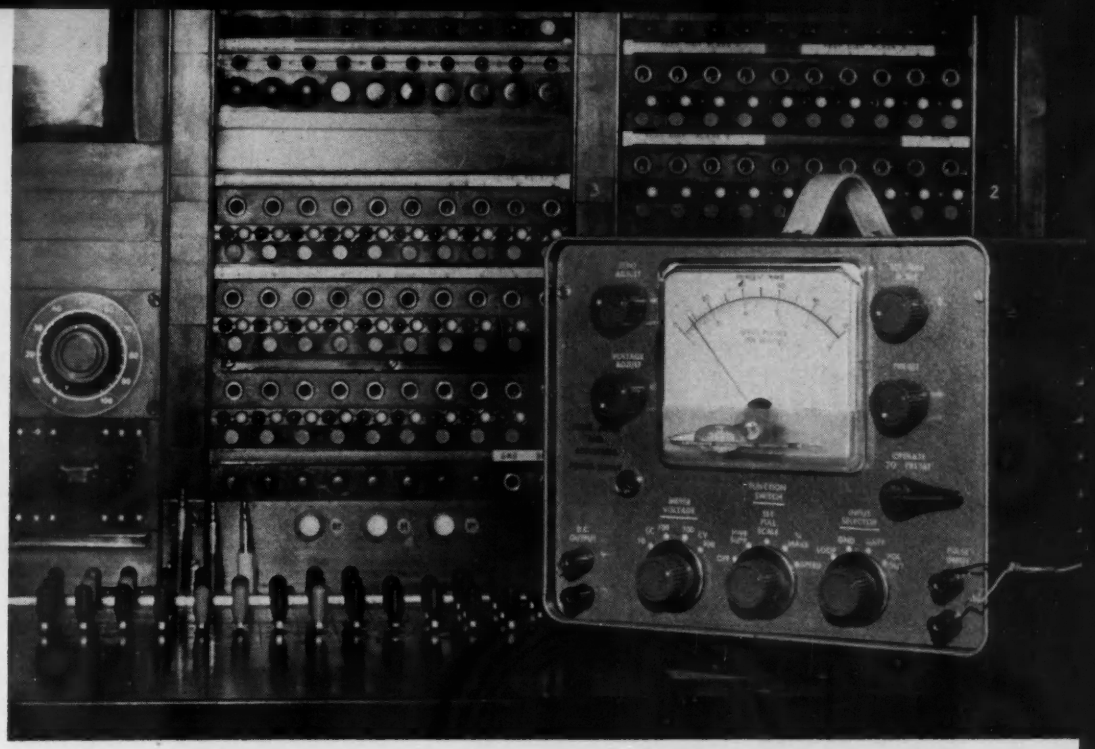
Go to any well-operated chain store system and they can tell you how many employes will be dismissed next year for taking money from the cash register and how many will be dismissed for carrying merchandise home with them without bothering to pay for it. They don't know *who* they will be, but they know the trends and can tell you *how many*.

Have you ever noticed how a lot of small items on sale in supermarkets are rather securely attached to an attractive piece of cardboard with good advertising copy or instructions on it? You will be told this is done to attract your attention — but if you press a little you will find the real reason is so you can't palm it into your pocket or purse.

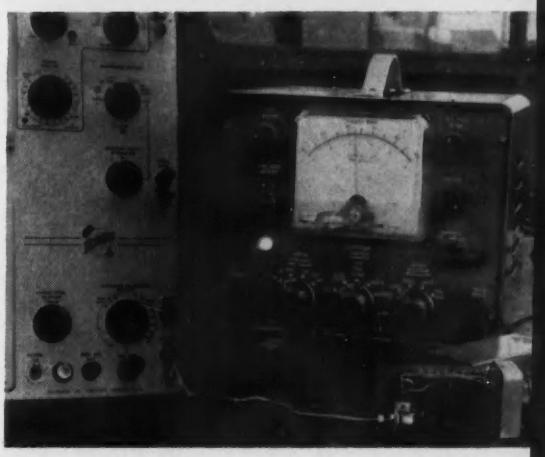
I remember a village store back in my boyhood where the storekeeper kept several cases of soft-drinks on the back porch. There were four other boys my age in the village and we frequently did some things for excitement. One night one of the boys suggested we go get some root-beer from those cases. He was immediately vetoed by the remaining four — and on the basis that it was wrong. If this happened today five boys might make the same decision but the chances are pretty good that the reason would be "*we might get caught.*" It seems that we are living in an age where to a higher per-

At Last!

(someone did it)



A PULSE METER



that is compact, easily carried, and plugs into the nearest 115 volt, 60 cycle ac wall outlet. Developed by telephone men FOR telephone men, our new pulse meter and power supply measures dial pulses from 0 to 15 pulses per second and percent make from 0 to 100 percent. It will accept loop, ground, battery, carrier, and polar-duplex pulses. Simple in operation, it can be easily carried and used at the test board, the telephone instrument repair bench — any place in the telephone exchange. For that matter, it can easily be moved to the actual subscriber instrument if the need arises. As an added bonus, the PMVPS-1 also gives you a dc power supply continuously variable from 0 to 300 volts. Use it to check transistor circuits, vacuum tube circuits, as a standby power supply—the sky is the limit! Best of all, you will be surprised that so much can be purchased for such a low price!

See it demonstrated and use it yourself at our exhibition in Room 626A, Conrad Hilton Hotel, USITA Annual Convention.

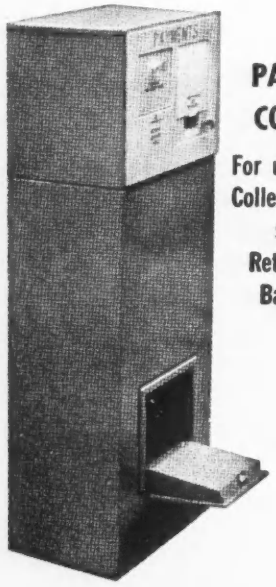
AIRTRONICS INTERNATIONAL CORPORATION

P. O. Box 8576, Fort Lauderdale, Florida (6900 West Road 84)

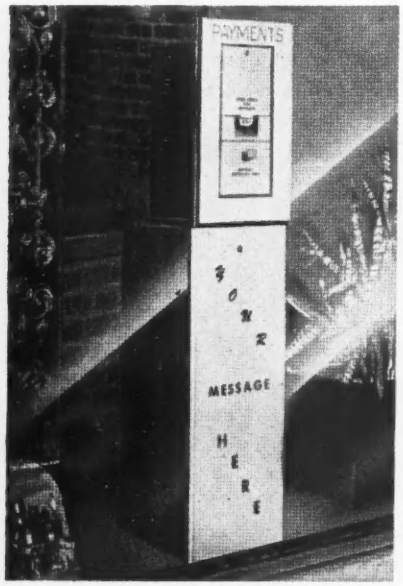
other product FIRSTS from Airtronics:

Program Equalizers
Portable Test Hybrid Sets
Artificial Transmission Lines
Line Matching and Terminating Sets
Switch Gain Amplifiers
Pulse Meters
Transmission Measuring Sets

There is a
DROPOSITORY
Specifically Suited to YOUR Needs!
COMPLETE *Self-Service* EQUIPMENT for PAYMENTS or DEPOSITS *"After Hours"*
Used by Public Utility Companies All Over the World



PAYMENT COUNTER
For use by your Collecting Agents such as Retail Stores, Banks, etc.



Economical PLATE GLASS INSTALLATION
(May Be Installed In Walls)
See Us In Room 626
At The USITA Convention
THE MOSLER DROPOSITORY CORPORATION
GRANDVIEW, MO.
Telephone: (Kansas City Exchange)
SOuth 1-8911

centage of people nothing is wrong except to get caught.

Perhaps I'm moralizing too much but a part of the greatest prayer in the life of man is "Lead us not into temptation." The youngster who hears his father or mother place a telephone call and give someone else's number as the billing party soon learns to do this himself and we soon find that, in addition to Pop and Mom, all the kids and their friends are cheating also. The effect is compounded.

I'm not implying there are no honest people anymore. This would be foolish — but I am saying that we are living in a time when it is considered smart to beat the parking meter, overstep the angles with income tax deductions, and get free toll telephone service.

Action Demanded

A FRIEND of mine, who recently received a toll statement with over $60. worth of toll calls he knew nothing about, observed "If the party who did this had been more discreet and charged fewer calls, like $10. worth, I probably would not have noticed it but simply figured my wife made the calls. What concerns me is that now I wonder how many of the calls I have paid for in the past were made by someone else." This comes from a man who has trusted us for 35 years — and then he said — "And you fellows better find some way of preventing this in the future!"

Strangely enough I find this is not limited to one company or one section of the country. It is general enough that I feel positive action is required rather than playing ostrich and hiding our collective head in the sand.

In view of our changing times why don't we frankly admit that we in the telephone business have a problem and an obligation to the honest subscribers who trust us to provide practices and equipment which protect them?

The provision of positive line identification would remove the temptation to cheat because they would "get caught." The cost for some companies to do this will be in the thousands of dollars and for some others it will be millions, so we immediately face the question "Is it worth it?" My first answer is another question. "What value do you place on a 35-year customer who says 'You'd better do something about it!'?"

Now each one "think for himself" as to whether it is worth it. How much toll are you writing off as unidentified? How much operating time was involved in handling the calls? How much equipment time was used? How much circuit time? What did it cost to send the tickets to the accounting office? What time was consumed before you found out the number used is not in service? What is the dollar value of the tickets? How much search time was used to try to find a number that might be the right one?

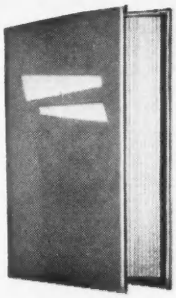
How much time is spent in the business office making adjustments? How much time is used to try to find the proper billing party? How much do you write off? In making adjustments, does the subscriber get an idea it is so easy he is tempted to have some legitimate ones written off? Do you ever get the feeling that you should investigate some cases where the customer does not complain, just in case you are overcharging an innocent customer?

When you have added up some of these costs for a month, multiply it by twelve to cover a full year — then you can see how much of an investment can be supported by your savings. Now before I am accused of saying that positive line identification will eliminate *all* of our unidentified and *all* of our adjustments in the business office, let me hasten to add that what I have done is ask some questions to focus attention on this problem

These items don't amount to much in small manual offices but as CDO's are established the problems develop — and when operator identified automatic ticketing comes into the picture these problems increase sharply. When we answer all this by saying "We are still making enough to offset these losses" we are compromising ourselves. Safeguards do not insult honest people. — *D. A. Perigo.*

HOW TO APPLY STATISTICS TO ENGINEERING DATA

—for more complete, accurate analysis



AIDED by this engineer's guide to practical statistics you can more fully analyze processing, research, and other kinds of industrial data. In plain terms it tells you how to apply statistical methods to engineering problems . . . how to correlate data . . . and how to treat experimental factors. Especially helpful, this easy-to-use book explains the technique of drawing the "best" line through data, and of accurately analyzing the variance. And—to round out your working knowledge of statistics—it gives you essential information on probability theory and frequency distributions. When you have a specific problem in statistical analysis, turn to the clear guidance, detailed examples, and more than 180 quick-reference tables in these pages.

APPLIED STATISTICS FOR ENGINEERS

By WILLIAM VOLK

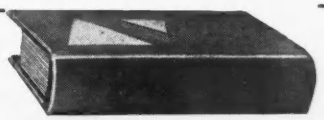
Senior Research Engineer, Hydrocarbon Research, Inc.

354 pages, 6 x 9, 27 illus., 181 tables, $9.50

Educational Division

TELEPHONE ENGINEER & MANAGEMENT

7720 N. Sheridan Rd. Chicago 26, Ill.



Fully explaining the fundamentals of

Semiconductor Physics

ELECTRONIC SEMICONDUCTORS

as related to rectifier and transistor problems

By EBERHARD SPENKE

Here is a rigorous and systematic introduction to semiconductor physics, developing the subject in a logical and consistent manner from simple concepts, and giving clear pictures of the conduction mechanism of electronic semiconductors within the framework of the *band model.*

The careful derivation of important relationships from precisely defined basic concepts and assumptions is one of the book's outstanding features. Others are the treatment of the acceleration of electrons; the treatment of the Zener effect; and the chapter devoted to statistics and kinetics of electrons as modified by electrostatic potentials. Germanium is the prototype substance used in all discussions of semiconductor behavior. All material on the conduction mechanism of semiconductors applies equally to thermionics, luminescence, and photoconductivity.

430 pages, 6 x 9, 163 illustrations, $11.00
Educational Division

TELEPHONE ENGINEER & MANAGEMENT

7720 N. Sheridan Rd. Chicago 26, Illinois

"If you don't think it will span 700 feet,

GO MEASURE IT!"

USS Tiger Brand Amertel 195 is a high-strength telephone wire that can be strung in light loading areas to spans of 700 feet; to 650 feet in medium loading areas; and to 600 feet in heavy loading areas. Fewer poles are needed, construction costs are the lowest.

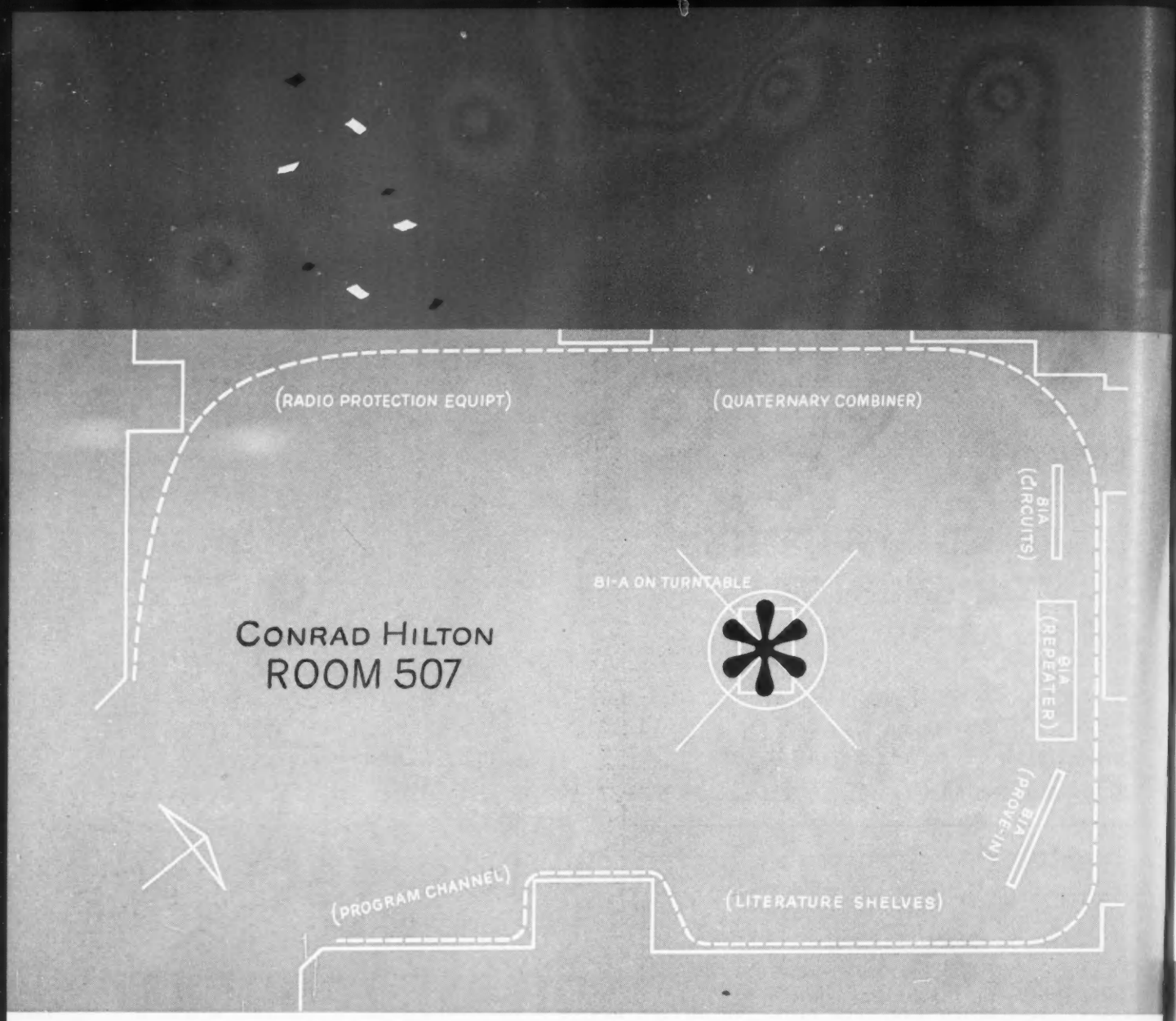
What's more, Amertel 195 offers improved voice transmission efficiency and greater protection against failure from ice loads. It has been known to stand severe ice loading without breaking. Yet when the ice melted, the wire for all practical purposes, resumed its original stringing sag.

More information is given in our "Amertel 195" booklet. For your copy, write American Steel & Wire, Dept. 0411, 614 Superior Avenue, N. W., Cleveland 13, Ohio.

USS, Tiger Brand and Amertel are registered trademarks

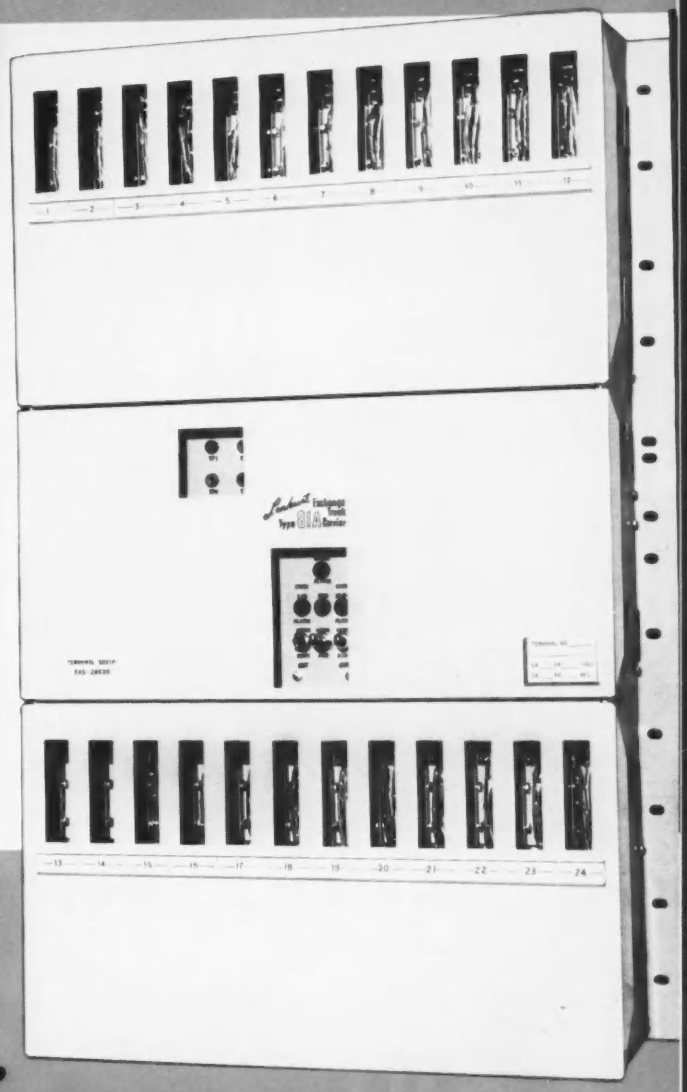
American Steel & Wire Division of United States Steel

Columbia-Geneva Steel Division, San Francisco
Tennessee Coal & Iron Division, Fairfield, Ala.
United States Steel Export Company



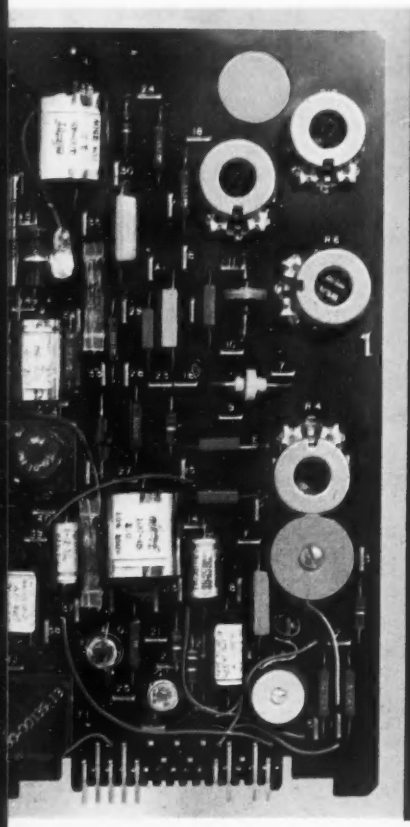
MAKE THIS A MUST AT USITA!

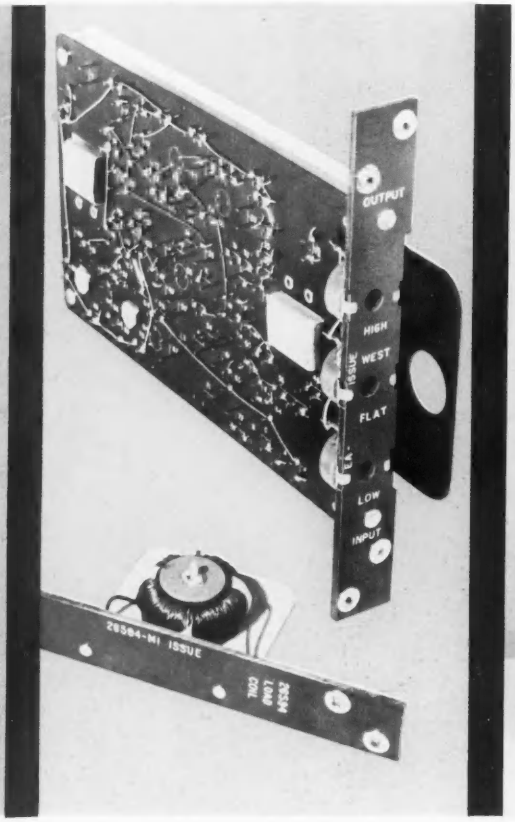
NEW

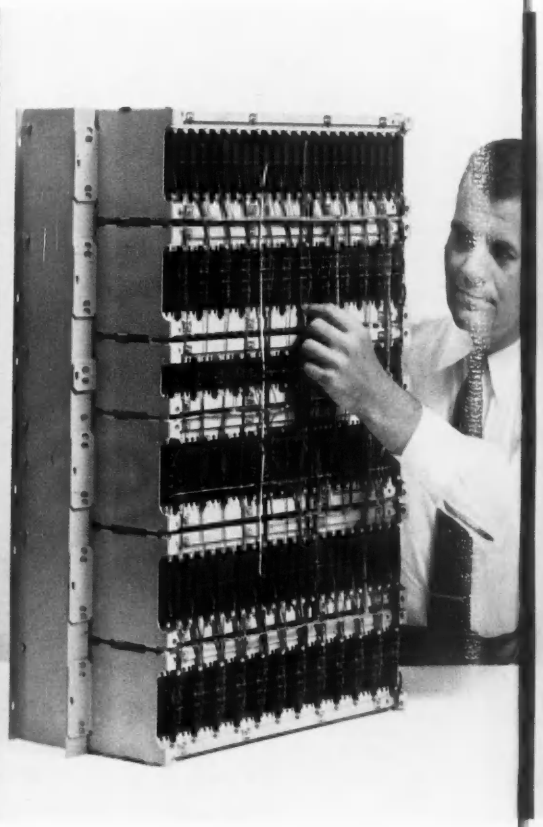


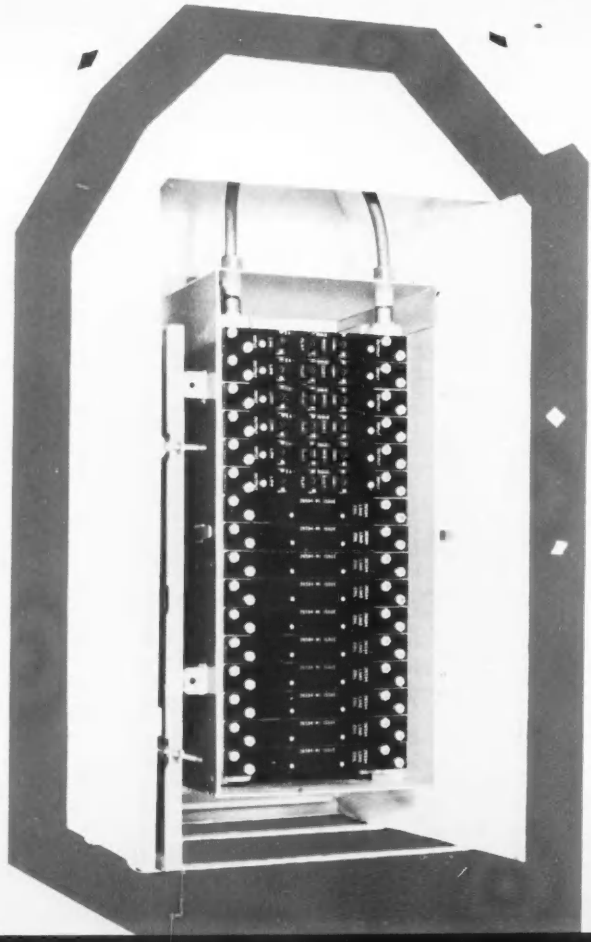
Lenkurt® Exchange Trunk Type 81A Carrier

LOWEST COST









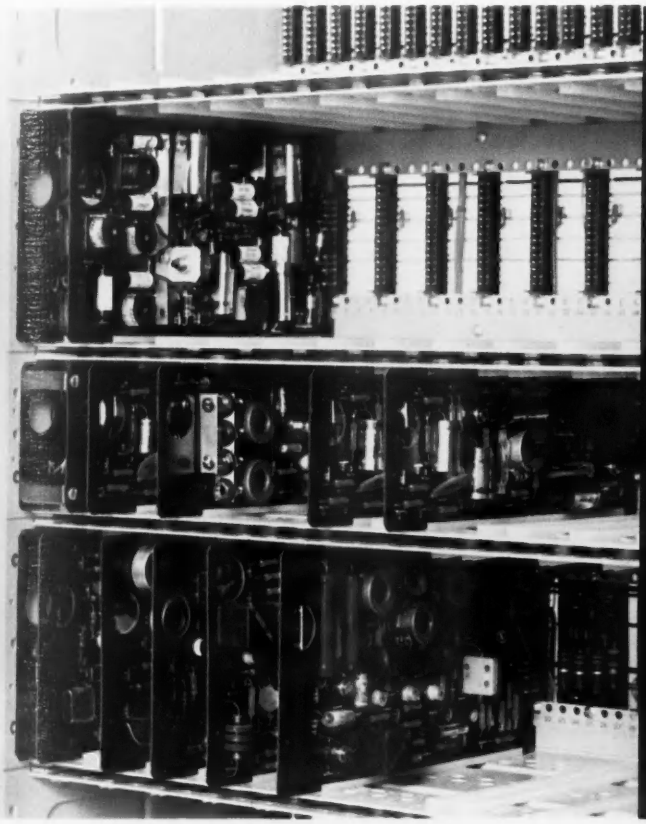
Lenkurt® Exchange Trunk Type 81A Carrier

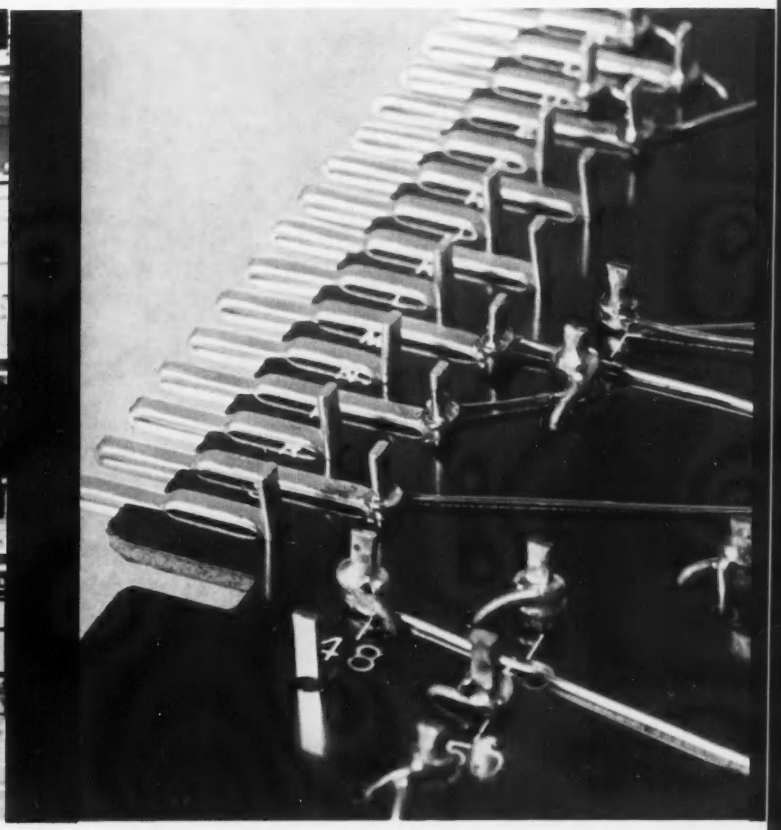
81A REPEATER
IN POLE-MOUNTING HOUSING

.FOR EQUIPMENT!

..FOR INSTALLATION!

...FOR MAINTENANCE!





lowest cost:
Lenkurt 81A Exchange Carrier costs less than cable at distances of 4 miles or longer. Additional incoming or outgoing trunk repeaters are not usually required with 81A. Four complete 24-channel systems mount in one 11½ foot rack. 81A saves floor space, power consumption, and initial cost.

high reliability:
Lenkurt "stitched wiring" construction drastically reduces the chance of failure due to poor solder joints, rough handling, flexing of cards, or vibration. Circuit performance is far less vulnerable to humidity and moisture absorption because conductors are in much less intimate contact with supporting board.

completely transistorized:
No electron tubes of any sort are used in the 81A system. Highly reliable semi-conductor diodes and transistors reduce power requirements, heat dissipation, and space requirements. System is powered from 48-volt office battery, only. Input power filter eliminates need for quiet battery.

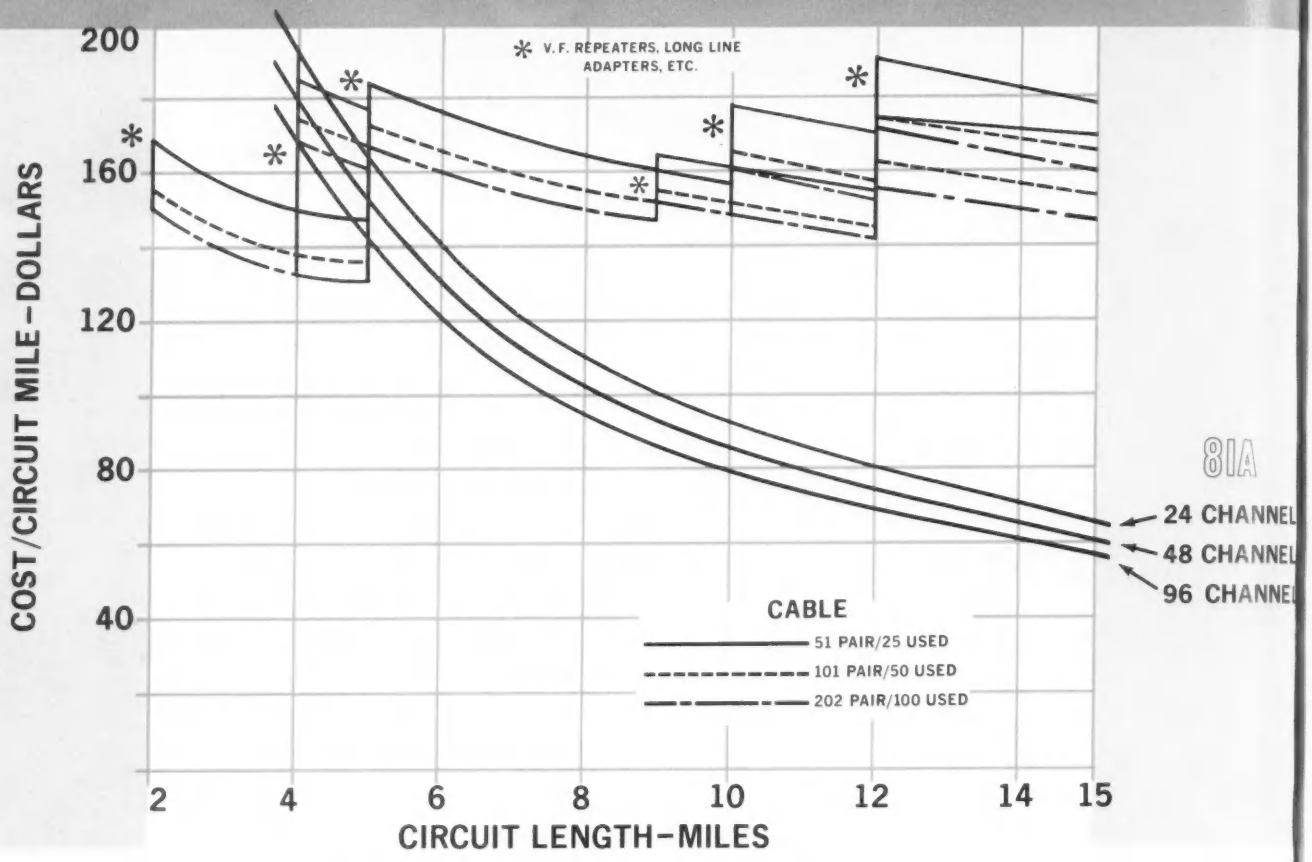
designed for growth:
Gas-tight repeater housings are designed to accept repeaters or voice-frequency loading coils in any combination. Repeaters may be exchanged for loading coils very quickly and without additional splicing. By equipping a cable with 81A repeater housings and inserting loading coils on VF pairs not in use for carrier transmission, circuit capacity of the cable can be expanded with minimum trouble and expense to meet changing conditions. Wire for 81A, then add channelizing equipment as additional circuits are required.

simple maintenance:
Plug-in design permits any circuit to be replaced instantly if required. Lenkurt "stitched wiring" permits easy replacement of damaged components.

best combination:
81A is designed for high-quality performance up to 15 miles or more, economical prove-in at distances under five miles. Maintenance requirements are reduced to the vanishing point by a happy combination of conservative telephone engineering, skillful use of the most reliable components, and superior mechanical construction methods.

Lenkurt Type 81A Exchange Trunk Carrier

- **CUTS YOUR EXPANSION COSTS**
- **PROVES IN AT 4 MILES**



FIRST-COST PROVE-IN

Lenkurt 81A Exchange Trunk Carrier on existing cable (including terminal equipment, carrier repeaters, repeater housings, and installation. Central office trunk repeaters are not necessary.)

VS

New Cable Construction (including cable cost, c.o. trunk repeaters, cable loading, VF repeaters, and installation.)

Here are the estimated *total* costs of Lenkurt's 81A Exchange Trunk Carrier equipment (including installation!) compared with new cable construction. Since the latter costs can vary widely, this analysis is limited to 22-gauge cable... the most representative wire size for inter-exchange use. This means that the cable-cost figures may be higher, and the comparison even more favorable to the 81A, if other cable is being considered.

Now look at the prove-in points! Type 81A Exchange Trunk Carrier proves in over new cable construction for distances as short as 4 miles! For greater distances, the savings are even more dramatic. And, with more expensive cable for comparison, the prove-in points can often drop *below* 4 miles. We suggest that you start planning now to fit Lenkurt's fully-transistorized 81A Exchange Trunk Carrier into your expansion plans. More details are available from your AE Carrier Staff Engineer in our District Office nearest you.

AUTOMATIC ELECTRIC

Subsidiary of

GENERAL TELEPHONE & ELECTRONICS

GENERAL SYSTEM

Printed in U.S.A.

YOUR COMPANY IS INVITED

to Become an Associate Member of the

Independent Telephone Pioneer Association

THE 5,009 members of the Independent telephone industry who proudly wear the industry's true badge of honor — the emblem of the Independent Telephone Pioneer Association (ITPA) — *cordially invite your company to become an associate member of the Pioneer organization.*

This invitation is extended to all *Independent telephone companies* and *manufacturing, supply or service companies* serving the telephone industry.

An Associate Membership in the Independent Telephone Pioneer Association joins your company with the veteran members of the industry — a group whose members have contributed much to the progress of the telephone industry and helped to produce today's modern communications systems.

Although exclusive and coveted, membership in the Independent Telephone Pioneer Association is not restricted to any special group.

Your company can give its support to the aims and goals of the Pioneer group by joining the ITPA as an Associate Member today.

Your company's application for an Associate Membership in the ITPA will receive the prompt attention of the ITPA Membership Committee.

PLEASE COMPLETE APPLICATION AND MAIL TODAY

Independent Telephone Pioneer Association

1037 S. 4th St., Springfield, Illinois

APPLICATION FOR ASSOCIATE MEMBERSHIP

....., 19.....

NAME OF COMPANY.....

TYPE OF BUSINESS.....

HEADQUARTERS.....

MAILING ADDRESS.....

ANNUAL DUES $.....

(Established by Associate Member — $5.00 to $50.00 Annually)

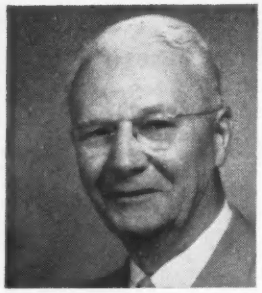
ANNUAL DUES MUST ACCOMPANY APPLICATION

Application subject to approval of Membership Committee

TE&M 10-1-60

Signature.....

(Print or Type)



INDUSTRY OBSERVATIONS

By L. A. GRITTEN

America vs. Karl Marx

THE 1950-1959 decade showed impressive gains for "The People's Capitalism." By 1959, about 12,500,000 people owned stocks in American corporations. In mid-1960, the 25 companies at the top of the list aggregated 7,151,161 stockholders.

American Telephone & Telegraph Company is far in the lead, with 1,754,000 stockholders. General Motors comes next with 785,000 stockholders. Twenty-three of these companies showed heavy gains over 1950; only two of them registered fewer shareholders in the decade.

There seems no longer to be any justification for the famous jibe, variously attributed to Max Adeler, Mark Twain and Will Rogers: "Company promoters go to Hell. The shareholders are sent to Heaven; they are too green to burn."

Retirement, Not Oblivion

THE Public Relations Department of the Michigan Bell Telephone Company issues an excellent "Information Bulletin for Retired Employes." It gives them a resume of world activity, as well as news of the company's plans and accomplishments.

That seems like a good public relations example for any company, large or small. Retired men and women have time to think and talk. If they are so treated and so informed that they feel themselves to be still a part of their company, they may greatly augment the public good will. Conversely, one neglected grouch can cause more harm in an evening than a public relations department can undo in a month. It is not good policy to put the dead and the retired in the same category.

"Shape Of Things To Come"

ANOTHER nail is being driven in the coffin of our "No Foreign Attachments" policy. What Hush-A-Phone started. Westinghouse Electric Corporation hopes to advance, with a method of remote control of domestic appliances by dial telephone.

The telephone will be connected to electric ranges, air conditioners and so forth, through a relay switching device. The absent housewife will be able to switch her gadgetry on and off from any dial telephone in the United States.

It is still in the experimental stage, but we may expect it soon. Meanwhile you had better train your service people to handle such complaints as: "My phone is out of order again. I switched on a roast of beef from the airport, but when I got home it had opened the range door and the cat ate it all."

Think of the fun you will have when our playful teenagers learn how to use their neighbors' remote control codes!

"The Chord Of Steel"

THIS is the title of a biography of Alexander Graham Bell, by Thomas B. Costain, to be published soon. (It is now running serially, abridged, in *Maclean's Magazine*.)

Bell was not, as he is sometimes portrayed, a poor young inventor who started from scratch. The Bell family was reasonably wealthy; and it was dedicated to the improvement of speech. Alexander Graham's efforts to invent the telephone followed a family objective.

Bell's grandfather, "Alexander the First," was a successful and prosperous teacher of speech and elocution.

His father, "Alexander the Second," invented and wrote a book about a system of "Visible Speech;" then in 1860 he wrote "Bell's Standard Elocution;" it has sold ever since

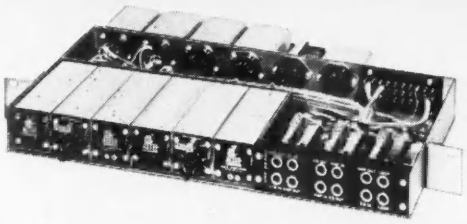
Please turn to page 80

"CHARLIE," by Jim Counts

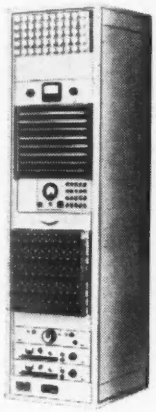
MEN... SINCE IT'S RAINING THIS MORNING, WE CAN STRAIGHTEN UP THE STOREROOM
MAN, I'LL SURE BE GLAD WHEN IT STOPS RAININ'... SO WE CAN GET BACK TO WORK
Jim Counts

SEE ALTEC'S LINE of improved telephone equipment

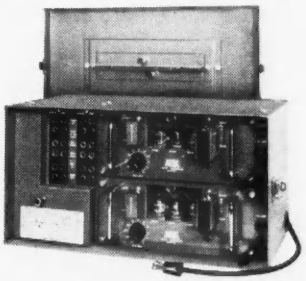
© 1960 Altec Lansing Corporation



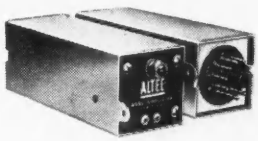
7300 telephone repeater term unit, fully complemented



Quick-Fix bay



S-17 Amplifier System



455A Amplifier

AT OUR BOOTH IN CHICAGO, OCTOBER 9-12

- 453A transistor type repeater amplifier for use on 24-26 volts.
- 455A transistor type repeater amplifier for 48-52 volts.
- 529 power supply designed to power 100 transistor type amplifiers from 110 volts AC.
- 533 power supply designed to power 1 transistor type amplifier from 110 AC. Contains bracket for amplifier.
- A series of equalizers for frequency correction for loaded, non-loaded, and open wire circuits.
- 460A transistor type compressor amplifier, interchangeable with 453-455 type.
- A series of brackets and trays to hold amplifiers and power supplies.
- 7300 telephone repeater panel which is equipped with test circuit jacks and accommodates the following plug-in items on standard 19" relay rack—1 rack unit of 1¾" height:

1. Transistor type amplifiers
2. Frequency correction equalizers
3. Hybrid coils
4. Compromise and precision balancing network
5. Relay for loss pad relay switching
6. 4-wire loop back relay for routine testing
7. Repeat coils for simplex or composite signaling

- S-17 Program amplifier, highest quality amplifier for program circuits • A series of microphones, amplifiers and loudspeakers for PA systems • A series of hybrid and repeating coils.

ALTEC LANSING CORPORATION

ALTEC Lansing Corporation Dept. TE-101D
1515 S. Manchester Ave., Anaheim, Calif.
161 6th Ave., New York 13, N.Y.
A subsidiary of Ling-Temco Electronics, Inc.

Tele-Wire

cordially invites you to come in and see us at the U.S.I.T.A. Convention EXHIBIT ROOM #549 — Hotel Conrad Hilton. We shall be pleased to tell you about our Cable, Wire, Telephones and other "SPECIALS" we have available such as:

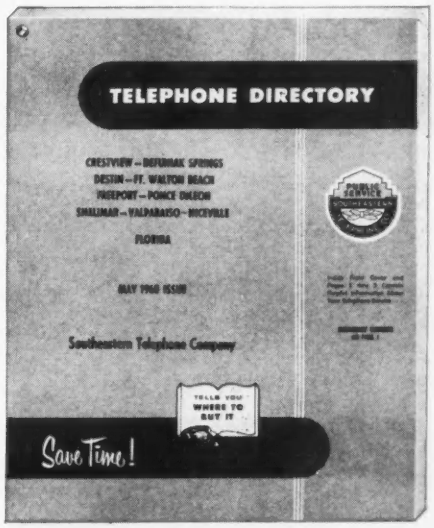
#12 BWG-HTL 135 Grade Galvanized Line Wire
PRICE .....$19.74/CWT DELIVERED
10,000 Lbs. .....$19.24/CWT DELIVERED
20,000 Lbs. .....$18.74/CWT DELIVERED

UTILITIES GRADE MESSENGER STRAND
— 7 Wire — ALL NEW!
5/16" (6M)—2,500 Ft. Reels
— $39.75/M Ft. DELIVERED
7/16" (10M)—2,500 Ft. Reels
— $59.75/M Ft. DELIVERED
1/4" (4,750#)—2,500 Ft. Reels
— $38.50/M Ft. DELIVERED
10,000 Ft. .....$36.00/M Ft. DELIVERED
50,000 Ft. .....$35.00/M Ft. DELIVERED

Remember the Exhibit Room — 549!
We'll be happy to see you.

TELE-WIRE Supply Co., Inc.

178-10 Liberty Ave. Jamaica 33, N. Y.
AXtel 7-4756



A Directory for the
Southeastern Telephone Company

Printed by
R. R. Donnelley & Sons Company
350 East Twenty-second Street, Chicago 16

and there have been nearly two hundred editions.

Alexander Graham "the Great" Bell added electrical science to the family flair for acoustic improvement. While he was still a young man, two of his brothers died in London of tuberculosis, and Alexander contracted the disease. In 1870 the family moved to Brantford, Ontario in a search for health.

Later in life, Bell said: "I went to Canada to die." Fortunately he lived another 52 years; and his genius advanced our civilization more perhaps than any single invention since Johann Gutenberg introduced his movable type.

Baby Kissing Passe?

THE Veterans of Foreign Wars flatly rejected a proposal by Democratic Presidential nominee John F. Kennedy that he should address their convention in Detroit by telephone. We are not concerned with what the V.F.W. may think of Mr. Kennedy, or vice versa; but how they regard the making of public contacts by telephone is important.

The V.F.W. attitude is hostile to an inevitable change with which our industry is closely associated. The day is passing when an important man can reasonably be expected to waste his energies in travelling and repetitious speechmaking, for the benefit of thrill-seekers who want to see him "in the flesh." Even with the television and public address devices available today, that is unnecessary. In the future, we shall hear, see and intimately know our great men by videophone. For anyone except his immediate associates, a desire for actual personal contact will seem archaic and foolish.

History And Public Relations

DON WRYSINSKI, Public Relations Director of the California Interstate Telephone Company, has sent us some of the "Romantic Heritage" booklets published by his company and issued to subscribers, Chambers of Commerce, hotels, motels, etc. Attractively written and copiously illustrated, they dramatize the early history and the industrial growth of the areas involved, not omitting the part played by the telephone company.

These historical pamphlets make fascinating reading. They are usually issued in connection with an "Open House" event; and they are proving to be valuable goodwill builders. The various Chambers and business concerns welcome them as accessory to their own projects.

The Sierra Nevada area is rich in colorful history, but it has no monopoly of it; and this appears to be a public relations plan worthy of emulation.

Beryllium, Wonder Element

FEW THINGS in our technological renaissance have been more remarkable than the development of new elements. Within a few decades, aluminum evolved from a costly novelty to a low-priced component of anything from engines and bridges to kitchen gadgetry.

Now comes Beryllium (Be-Atomic weight of 9.013), formerly known as Glucinum. It was first discovered by Vauquelin in 1798, but until recently it was unknown to the world in general. In nuclear and space development it is invaluable. It weighs one-third less than aluminum. It withstands very high temperatures without loss of rigidity. It reflects neutrons.

MRS. HELEN FOULTZ, pres., Coopersburg (Pa.) Tel. Co., prepares to board North Electric's Cessna 310 for the return flight to Coopersburg. Also boarding the plane is LESTER NASE, manager, and seated is RAYMOND JANESCH, equipment supervisor of the Coopersburg company. The trio concluded a visit to the North Electric Co.'s Galion, Ohio, plant for the purpose of negotiating for a new 620-line NX-2 Modular Crossbar System. The new terminal-per-station equipment will replace the original North CX switchgear now in operation at Coopersburg. Financing for the NX-2 equipment was arranged through North Electric.

The first man in outer space will be protected by a shield of beryllium. The capsule in which he will return to our atmosphere at 18,000 miles an hour will be shielded with it; nothing else available can absorb and dissipate the tremendous heat that will be generated.

Although beryllium of nuclear grade now costs about $46,000 a ton, the demand far exceeds the supply. The British development calls for about $80,000,000 worth of it annually by 1962, for the sheathing of fuel elements in atomic reactors. In this country we are still behind in civilian reactor development, but our annual demand for beryllium is expected to pass the $80,000,000 mark in the near future. It is estimated that the free world demand for this wonder-element in 1962 will be more than ten times the total production of last year.

As the telephone industry raises its eyes to the outer spaces, as spatial communication becomes a normal working system, beryllium will be one of our essential materials; it seems to stand today where aluminum stood at the turn of the century.

The Daily Joke . . . Without Commercials

IN VIENNA, Austria telephone service embraces all life and living. A flick of the dial brings you anything from stock market data to a baby-sitter. If you dial 1717, you hear the "Daily Joke," new every day, with no commercials.

The London PUNCH comments: ". . . calls, all on reversed charges, to voice complaints about bad taste, obscurity of point, and infringement of professional buffoons' material, are likely to block all lines to 1717 until long after the next day's joke is overdue."

— Leslie A. Gritten

Personalized service pays off for you

HARRY: "Chet, I have a problem. Maybe you can help me."

CHET: "That's what I'm here for, Harry. How can we be of service?"

HARRY: "I need a tri-directional sign . . . a couple of hundred splicing sleeves . . . and two beige wall telephones."

CHET: "No problem at all, Harry. I'll take care of it."

HARRY: "But Chet—I need this stuff 'yesterday.' I know it's not much of an order, but can you rush it?"

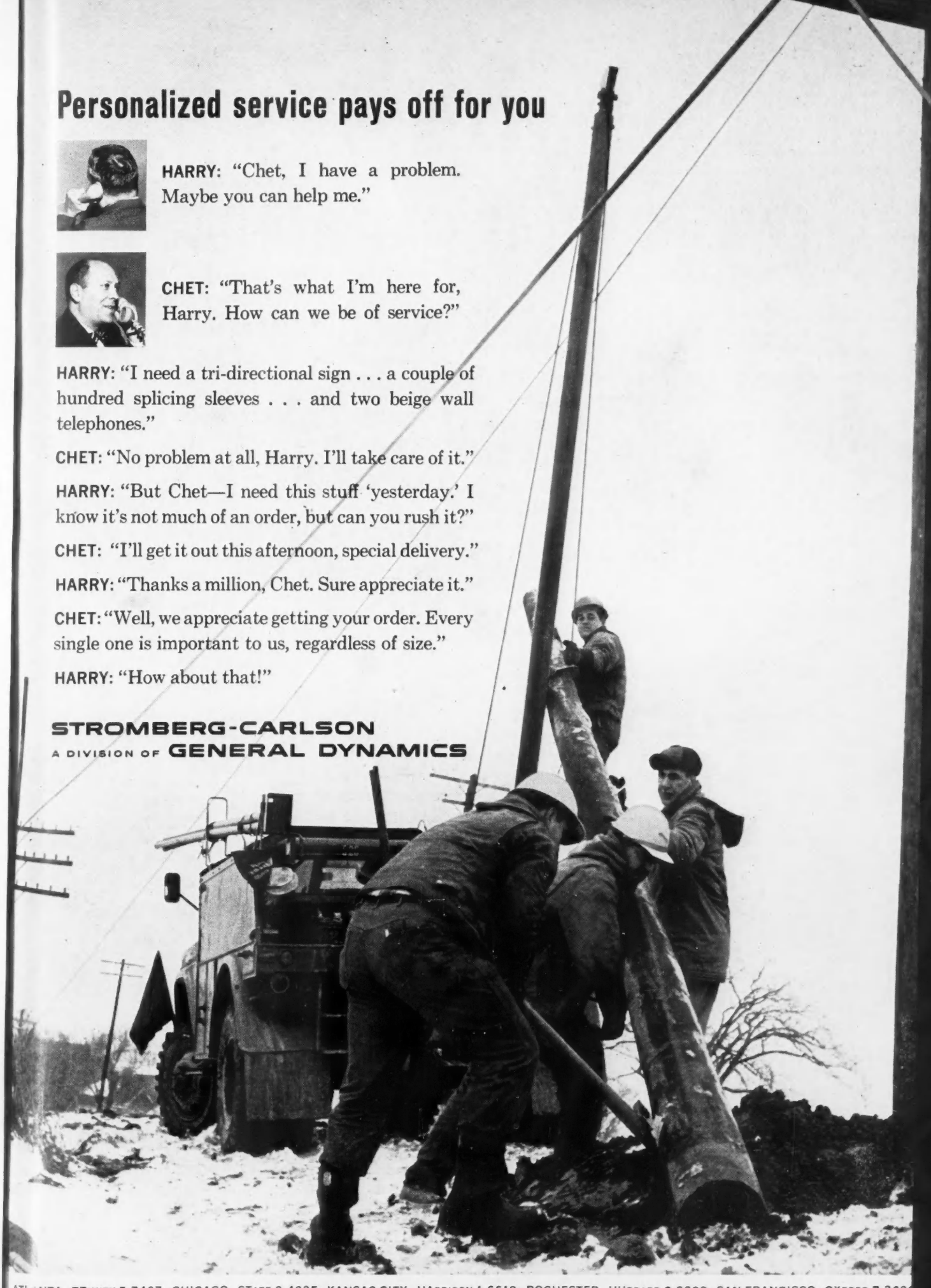
CHET: "I'll get it out this afternoon, special delivery."

HARRY: "Thanks a million, Chet. Sure appreciate it."

CHET: "Well, we appreciate getting your order. Every single one is important to us, regardless of size."

HARRY: "How about that!"

STROMBERG-CARLSON
A DIVISION OF **GENERAL DYNAMICS**



ATLANTA: TRinity 5-7467; CHICAGO: STate 2-4235; KANSAS CITY: HArrison 1-6618; ROCHESTER: HUbbard 2-2200; SAN FRANCISCO: OXford 7-363

THE WASHINGTON BEAT

By ROLAND DAVIES and FRED HENCK

WASHINGTON OBSERVATIONS

NARUC Special Telephone Committee directs its Telephone Staff Committee to proceed with an over-all analysis of the message-minute-mile and circuit mile plans of separations.

Telephone Separations

THE SUBJECT of telephone separations — now a key factor in hearings before several state commissions on toll compensation complaints of Independent companies against Bell System companies — is being given a long, hard look by the National Association of Railroad & Utilities Commissioners in preparation for the annual convention of the organization of regulatory officials in late November in Las Vegas, Nevada.

The NARUC Special Telephone Committee has directed its Telephone Staff Committee to proceed with an over-all analysis of the message-minute-mile and circuit mile plans of separations, setting forth the pros and cons of each plan, the contents of them as previously proposed, and the economic impact of each.

This decision by the Telephone Committee was taken at a recent meeting held in St. Louis in conjunction with a meeting of the NARUC Executive Committee. Telephone separations occupied a considerable amount of the discussion at that session.

The work by the Telephone Staff Committee is to be done in cooperation with the FCC staff. Upon completion of the staff report, according to Telephone Committee Chairman Everett H. Krueger, Jr., of the Ohio Public Utilities Commission, the NARUC Telephone Committee plans to ask the FCC Commissioners for a conference, at the convenience of the federal agency, to review the separations methods.

This conference is expected to be held sometime in October so that the NARUC group can complete its work well before the NARUC convention. As this was written, it was anticipated that the next meeting of the Telephone Committee will be held in Washington at the same time as the conference with the FCC. The Telephone Staff Committee, or members thereof, will be holding conferences in the interim while working on the separations methods analyses.

In another major step in the separations field, the NARUC Telephone Committee has decided to submit to the Executive Committee for its approval, and submission to the next NARUC convention, a resolution proposing that any reduction in intrastate revenue requirements resulting from modifications or changes in the existing separations procedures be utilized by the respective state jurisdiction to reduce intrastate-interstate toll rate disparities.

The question was raised earlier by FCC representatives, at a meeting of the NARUC Special Telephone Committee, as to whether any separations changes agreed to by the FCC would in fact have their benefits transmitted to the state jurisdictions in terms of revenue requirements.

The Telephone Staff Committee also was requested by the commissioners' group to contact the FCC staff as to the FCC's ability to re-examine the exchange component of telephone plant for separations purposes, in line with possible revisions in the Charleston separations plan. This, it was emphasized, would be a long-range program, not a part of the immediate project of putting down on paper the aspects of the circuit mile and M-M-M plans.

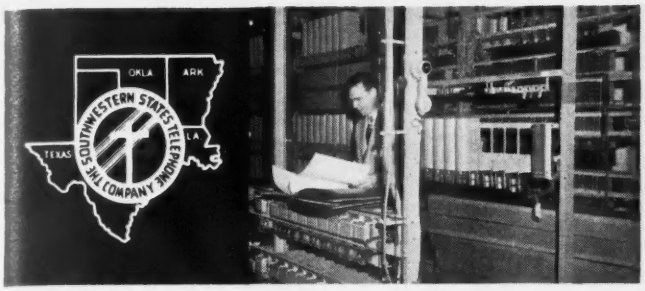
The exchange component and whether or not the Charleston plan should be applied in Bell-Independent toll settlements have been important aspects of the series of toll compensations now in progress in four states, on complaints of the Independents against Bell Companies.

Meanwhile, the NARUC Special Telephone Committee, facing serious difficulties in financing the project, has received approval from the association's Executive Committee to abandon, for the time being at least, the projected study of Western Electric Co. accounting methods, cost apportionment, pricing policies, and results therefrom.

The Executive Committee, after discussions with the telephone group, adopted what amounts to a "motion of intent" to present a resolution at the Las Vegas convention to relieve the Special Telephone Committee from the responsibility of carrying out the W. E. Co. study called for by a resolution at the 1958 convention and reaffirmed at the 1959 session.

NARUC and FCC sources emphasized that the decision not to proceed with plans for a Western Electric study at this time does not mean that any of the other joint or separate activities of the regulatory bodies relating to Western Electric — principally the receipt and review of vari-

Please turn to page 86



A YEAR OF *EXPANSION* AND *PROGRESS*

The Southwestern States Telephone Company now provides modern efficient service to 150,000 telephones in various areas of Texas, Oklahoma, Arkansas and Louisiana. Our construction program is geared to meet the exacting demands of military, industrial and residential subscribers throughout our exchange areas. Total plant investment now exceeds $46,450,000, an increase of 104 per cent during the past five years.

THE SOUTHWESTERN STATES TELEPHONE COMPANY

300 MONTGOMERY STREET · SAN FRANCISCO 4, CALIFORNIA

PROFILE OF A *GROWING* COMPANY

Continuing its dynamic expansion program, California Water & Telephone Company serves 160,000 telephones in diverse areas of Southern California. This forward-looking company provides the most up-to-date telephone service and equipment available to meet the varied demands of its residential, military and business subscribers.

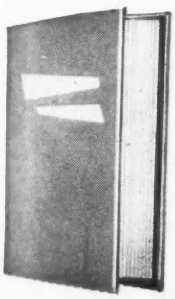
Our water divisions, located in parts of Los Angeles County, portions of San Diego County, and on the Monterey Peninsula, provide water service to an estimated population of 200,000.

Total plant investment now exceeds $100,000,000, an increase of nearly 100 per cent during the past five years.

California *Water & Telephone Company*

300 MONTGOMERY STREET · SAN FRANCISCO 4, CALIFORNIA

Solve electronic control circuit problems fast!



Everyone concerned with the design or adaptation of electronic control circuits will find immediate and frequent use for this handbook. It compiles over 250 important electronic control circuits, each complete with values of components . . . clearly-drawn diagrams . . . and to-the-point discussions of how the circuit works.

Advances in the field are thoroughly covered to show the present state of the art of circuitry in such areas as alarm circuits, audio control circuits, computer control circuits, machine control circuits, magnetic amplifier circuits, nucleonic circuits, process control circuits, servo-mechanism circuits, & switching circuits.

Diagrams and analyses of 267 actual basic circuits

***Just Published* — Handbook of**

ELECTRONIC CONTROL CIRCUITS

By JOHN MARKUS, Electronic Consultant

360 pages, 8¼ x 11, 267 diagrams, $8.50

In the fact-packed pages of this handy reference you'll find a ready source of information about the circuits you need for any electronic control application. It contains all types of circuits — from counting to welding control, both simple and advanced.

For each of the scores of circuits, the handbook brings you the values of all the important components to help you read the circuit and redesign it for your own use. With these data as your starting point, you can easily adapt any circuit to your need.

Educational Division
TELEPHONE ENGINEER PUBLISHING CORP.
7720 N. Sheridan
Chicago 26, Ill.

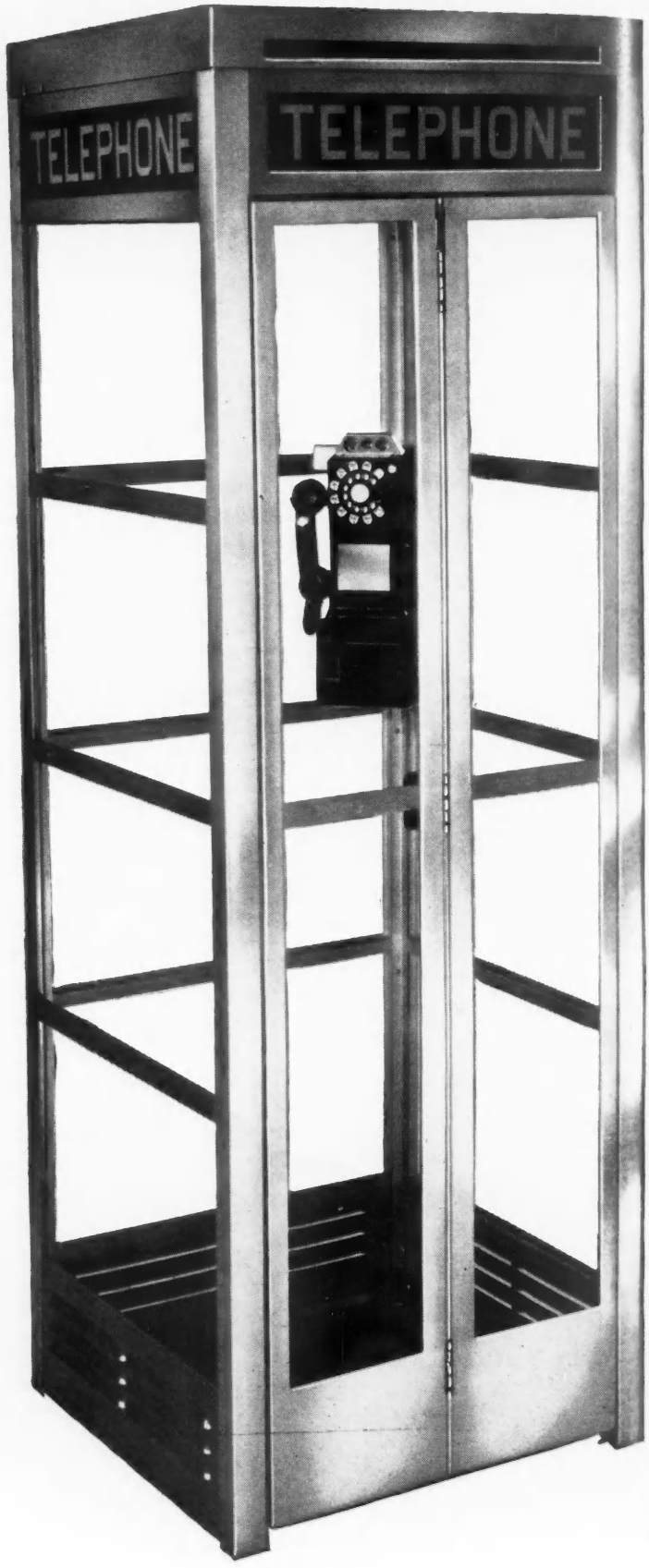
GROWING WITH THE PACIFIC NORTHWEST

West Coast Telephone Company's growth has closely paralleled the industrial, commercial and residential expansion of the Pacific Northwest. The Company now serves more than 180,000 telephone subscribers throughout this area. Our high standards of service and utilization of modern equipment are important factors contributing to the Company's position as 10th largest of the 3,500 Independent Telephone Companies in the nation.

WEST COAST TELEPHONE COMPANY

300 MONTGOMERY STREET · SAN FRANCISCO 4, CALIFORNIA

NEW "COMPACT" ALCOA ALUMINUM BOOTH TAKES 26% LESS FLOOR SPACE !



Fits where no booth ever fitted before . . . stacks closer in high-revenue locations!

This new Alcoa® Aluminum "Compact" indoor booth adds revenue by providing convenient service with complete privacy in places no booth ever fitted before. Just 28¾ in. square, it takes 26 per cent less area than its bigger brother . . . saves valuable floor space in supermarkets, drugstores, office buildings, department stores and other busy locations.

Its flush roof lets the Alcoa "Compact" booth stack closer in tandem where traffic dictates to earn more revenue per square foot of floor space than any booth made before. Designed to harmonize with modern decor, the Alcoa "Compact" booth attracts passers-by with its clean appearance and slim lines. Ceiling vent fan and louvered bottom panel are optional.

Maintenance: minimum! Solidly built of heat-treated Alcoa Aluminum Extrusions, the Alcoa "Compact" booth resists damage and vandalism. Alumilite* finish stays bright and shiny with just an occasional washing down.

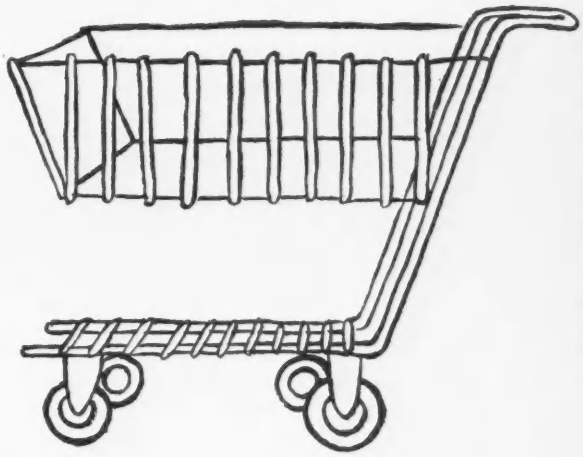
*Trade Name of Aluminum Company of America

Contact your telephone supply jobber for more information on the new Alcoa "Compact" indoor booth, or write for free folder: Aluminum Company of America, 1721-K Alcoa Building, Pittsburgh 19, Pa.

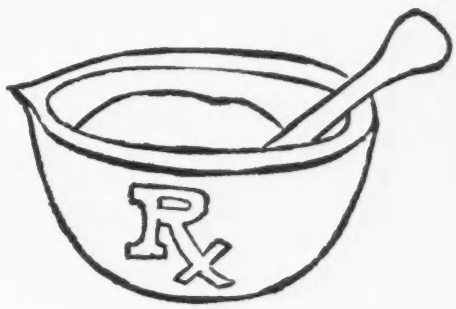
ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

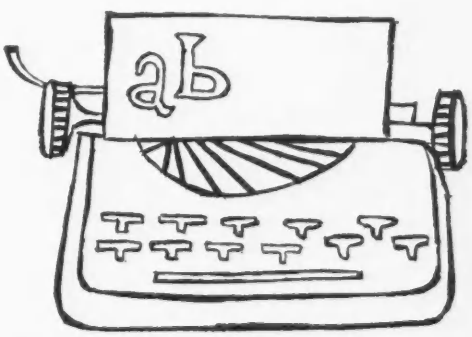
Alcoa "Compact" telephone booth goes where revenue is high:



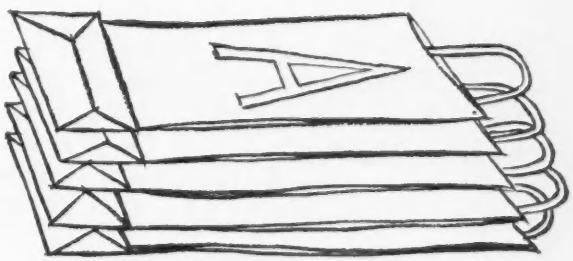
Supermarkets



Drugstores



Office Buildings



Department Stores

(Continued from page 82)

ous reports — will be changed in any way.

Also, NARUC officials stressed, the action does not rule out the continuing search for financing which would make possible a study of the size and scope deemed necessary.

In connection with the projected Western Electric study, Mr. Krueger said that the Telephone Committee agreed to submit to the Executive Committee its finding that the only method of financing the anticipated substantial cost of the project — with no appreciable state commission or NARUC funds available — which was seemingly available was from Western Electric itself, through an assessment or similar basis.

As a result, the STC asked the executive group whether it should proceed with negotiations with the Bell System on financing, establishing proposed fiscal procedures which would have resulted in the expenditure of the funds and the investigation itself being under the complete control of the NARUC. If the Executive Committee could not agree to this program, the STC asked that it be relieved of the mandates imposed on it by the conventions.

It was understood that there was a substantial division of opinion within the Executive Committee, with a decision ultimately reached that the STC should be relieved of the study mandate.

In accordance with the action, it is also assumed that there is no prospect in the foreseeable future for a similar study of the Automatic Electric Co., which would have logically followed any investigation made of Western Electric.

Returning to the separations proposals, the original circuit mile plan contemplated that the book costs of Bell System associated company toll lines plant in a given state would be computed by determining the system-wide average book cost per circuit mile of such plant and applying that average cost to the number of associated company-jointly used circuit miles in the state. This computed book cost of toll lines plant would then be separated between state and interstate operations in proportion to the relative state and interstate message mile minutes of use over the jointly used toll lines.

Under the M-M-M plan, interexchange toll line book costs would be obtained for the Bell System as a whole. Similarly, for the system there would be developed total airline state and interstate message mile minutes. These data would be used to compute a book cost per airline mile MMM which would be multiplied by the number of state toll MMM's in each state to obtain intrastate toll line costs. These costs would then be deducted from the associated company's toll line costs in that state; the remainder represents plant assignable to interstate operations.

Last year's NARUC convention resolution contemplated that three separations plans be studied, the third being "full Phoenix." Under that plan, a nationwide average book cost per circuit mile of Long Lines toll line plant is developed and applied to the number of Long Lines circuit miles in each state. In each state, the resulting book costs are combined with the associated company book costs of toll line plant in that state and the sum is apportioned between state and interstate operations based on the total associated company plus Long Lines airline MMM.

Postoffice Announces Tests Of Facsimile Mail Service

THE U. S. Post Office Department, which first disclosed a year ago that it was experimenting with facsimile mail service — by which the contents of letters being mailed between distant cities would be transmitted over leased communications lines — has now announced that tests of the facsimile mail service between government agencies in Washington and Chicago and Lansing, Mich., will be conducted by the department, starting in October.

The October tests will use only government communications and will not be available to the public. They will be conducted to demonstrate that the secrecy of the mails can be preserved with the facsimile method.

It was understood that in the latest tests, privacy will be assured by scrambling the content of letters at the transmsision end. At the receiving end, it will be unscrambled by electronic equipment, photographically reproduced and automatically sealed in an envelope without anyone having seen its contents.

The International Telephone & Telegraph Corp. has been studying the feasibility of facsimile mail under a contract awarded by the Post Office Department last October. In conducting the tests between cities, the Post Office has leased circuits from the American Telephone & Telegraph Co. Long Lines Department.

The latest announcement of the Post Office's plans has been attacked as a "socialistic scheme" by E. L. Hageman president of the Western Union Division of the Commercial Telegraphers' Union, who asked Congress to call a halt to the program.

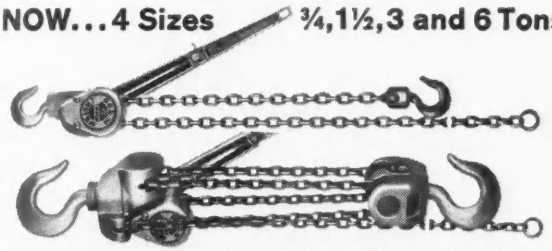
In addition to the effects on the telegraph industry, facsimile mail service by the Post Office would have other "widespread repercussions," Mr. Hageman declared. "The railroads and airlines have handled the mail in the past and received huge subsidies for this service. If these subsidies are withdrawn, some railroads and airlines may be placed in serious financial difficulties," he stated.

The CTU official said his union "was greatly concerned about the effect of this proposed new government service on the jobs of 35,000 union members who work for the Western Union Telegraph Co." and said "it was obvious that if the U. S. Post Office went into the cut-rate telephone business, it would destroy the private telegraph business and also destroy the jobs of almost all employes of Western Union."

He charged that the Post Office's plans to handle the facsimile mail at the rate of seven cents per letter "would result in a tremendous deficit that will have to be borne by the taxpayers." He challenged Postmaster General Arthur Summerfield "to prove that facsimile messages could be transmitted by telegraph from Chicago to Washington at a cost of only seven cents."

New ¾-ton Type "C" Pull-A-Way

NOW...4 Sizes ¾,1½,3 and 6 Tons



WRIGHT Type "C" Pull-A-Ways make easy work of hundreds of quick hook-up jobs. Now available in four sizes—¾, 1½, 3 and 6-ton—Type "C" Pull-A-Ways are portable, safe and rugged. Corrosion-resistant modern aluminum alloy castings are used for gear case, handle and covers of all models. Hooks, load chain and chain sheave are made of alloy steel. Positive, dependable load brake securely holds load at any point. Lubricated for life. Weights: ¾-ton, 12½ lbs; 1½-ton, 23½ lbs; 3-ton, 36½ lbs; 6-ton, 63 lbs.

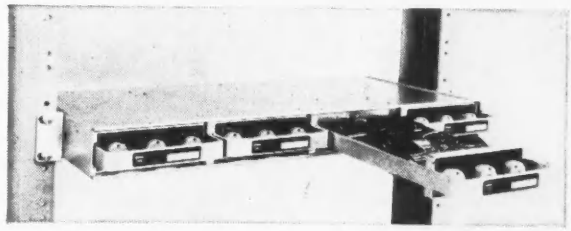
Write to our York, Pa., office for Bulletin DH-56

WRIGHT HOISTS

Wright Hoist Division • American Chain & Cable Company, Inc. ACCO

York, Pa., Atlanta, Chicago, Denver, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

Budelman Carrier Microwave VOICE FREQUENCY REPEATER



The Type 251A Voice Frequency Repeater is designed for use on wire lines to amplify voice frequency signals. Its two transistor amplifiers provide up to 20 db gain in each direction. It draws only 3.4 milliamps from a 12, 24 or 48 volt battery. Four of these compact repeaters fit on one mounting shelf. Easiest to adjust . . . no test equipment required.

Also available for use on loaded cable.

Write for Technical Literature

BUCKEYE TELEPHONE & SUPPLY CO.
1250 Kinnear Rd. • Columbus 21, Ohio
Phone—HUdson 8-0655 (Area Code 614)

WORK ON RELAYS?

Then you need this HANDY, COMPLETE

TOOL KIT

EVERY TOOL NECESSARY FOR ADJUSTING, CHECKING AND TROUBLE-SHOOTING RELAYS

18 TOOLS

All 18 tools especially designed for RELAY WORK. Includes Contact Burnisher with extra blades, Spring Tension Gauge, Wrenches, Thickness Gauge Set, Inspection Mirror, etc. All in Vinyl Case.

KIT NO. TK-18 $34.00 COMPLETE

Write for bulletin and FREE copy of valuable book on "How To Service Relays."

Order Direct.

P. K. NEUSES, INC.

511-21 N. DWYER ST. • ARLINGTON HEIGHTS, ILL.

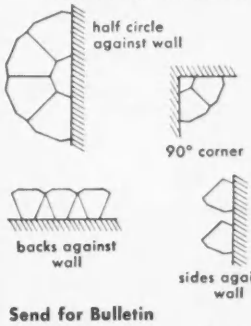
ALWAYS "WHISPER QUIET" IN BURGESS-MANNING PHONE BOOTH!

Acoustically efficient . . . there's no noise in . . . no conversation out . . . in the Burgess-Manning "Hear-Here" Acousti-Booth, regardless of all noise around you.

Easily installed — no maintenance . . . air is always fresh, no corners to sweep, no glass to break, no hinges to stick.

Compactly designed, in silver gray hammer finish, Burgess-Manning Wall Model 45 "Hear-Here" Acousti-Booth has "theft-proof" phone mounting. Easy, quick booth mounting with side or back brackets.

New Triangular Design for Space-Saving Multi-Booth Installation



Send for Bulletin A-142-4AF

for full details of Model 45 "Hear-Here" Acousti-Booth. Other models also available.

3 Heating Cooling Acoustical

BURGESS-MANNING COMPANY
Architectural Products Division
749 East Park, Libertyville, Ill.

REYNOLDS ALUMINUM

• Attractive • Portable •

FOR OUTDOOR* INSTALLATIONS

This attractive aluminum booth is made of Reynolds Aluminum extrusion and sheet alloys with a clear anodized finish. The structure is available in any combination of clear safety glass panels and colored panels. Colored ceramic fired panels are available in red—porcelainized panels in red, green or blue and with "Telephone" sign panels to match. All panels are cushioned in neoprene and are held in place with extruded aluminum retaining strips.

Size: 33½″ x 33½″ x 86⅛″ (completely assembled)

Roof: 35 5/16″ x 35 5/16″

Door Openings: 24½″ x 76″

Directory Rack: A double directory rack and two piece shelf located on the side wall are standard equipment.

Material: Aluminum Extrusions—Alloy 6063-T5
Aluminum Sheet —Alloy 3003 and 6061

Finish: All aluminum components are protected with a heavy clear anodized film.

Glass Panels: 7/32″ Tempered glass.

Colored Glass Panels: 7/32″ Ceramic fired, red.

Glazing Strips: Extruded Neoprene.

Shipping Weight: Approximately 395 pounds.

Light: Two 40-watt circular fluorescent lamps—operated from 110 volt AC supply.

Wiring Inlets: Two at top and two at bottom of booth.

Optional: Colored porcelainized panels—red, blue or green; one-piece continuous shelf as alternate to directory rack and two-piece shelf; ⅛″ aluminum tread plate floor is optional at extra cost.

Foundation: 40″ x 40″ x 4″ concrete slab recommended for foundation (not furnished by Reynolds Metals Company).

Shipping: Booths are shipped completely assembled and packed in a sturdy container on a wooden skid. It is a simple operation to move fully assembled booth into position.

Watch Reynolds new TV show "Harrigan & Son", Fridays, starting October 7; also, "All Star Golf", Saturdays, resuming October 15—ABC-TV. And on Sunday, October 16, be sure to see the exclusive showing of America's new 1961 cars on The National Automobile Show, direct from Detroit over CBS-TV, 6 to 7 P.M. EDST.

TELEPHONE BOOTHS

• Practical • Low Maintenance

Now you can build added revenue with indoor installations of Reynolds new, lightweight telephone booths, and at a lower cost than conventional outdoor booths. This new booth comes fully assembled, is easy to locate and may be set up singly or in tandem. It's ideal for location in hotels, supermarkets, airports and department stores.

Size: 28¾″ x 28¾″ x 88″ (completely assembled).

Roof: 28¾″ x 28¾″ with louvered vent.

Door Opening: 24½″ x 76″

Shelf: A one-piece shelf extends across rear of booth under coin box.

Material: Aluminum Extrusions—Alloy 6063-T5
Aluminum Sheet —Alloy 3003 and 6061

Finish: All aluminum components are protected with a heavy clear anodized film.

Glass Panels: 7/32″ clear tempered glass.

Colored Glass Panels: 7/32″ Ceramic fired, red—Porcelainized panels in red, blue or green are optional.

Glazing Strips: Extruded neoprene.

Shipping Weight: 360 pounds.

Light: Two circular fluorescent 40 watt ceiling lights operated from 110 volt AC supply.

Wiring Inlet: At top and at bottom of booth.

Floor: 1/8″ thick aluminum tread plate with raised diamond pattern design.

Shipping: Booths are completely assembled and packed in a sturdy container, ready to erect in position.

Have your Reynolds Distributor show you how profitable a pay station can be with low-cost, easy to install aluminum telephone booths. Contact the local Reynolds sales office for name of nearest Reynolds Distributor or write Reynolds Metals Company, Box 2346-EF, Richmond 18, Virginia.

* **Although these booths were designed for a specific purpose they are not limited in use. The indoor booth can be used outdoors and conversely the outdoor booth can be used indoors.**

New Products' Showcase

SUPPLIES And EQUIPMENT

By Dick Reynolds

New Dead-End

FASTER false dead-ending of messenger strand can now be accomplished without cutting the messenger by means of a new Preformed Dead-End developed by Preformed Line Products Company.

Advantages of the new dead-end are: (1) One-piece product simplifies attachment, (2) application is entirely by hand, no tools, (3) uniformity of all applications is assured, (4) tedious threading of strand through "the eye of a needle" is eliminated, (5) no danger of injury from strand flying loose when it is being cut or bent, (6) holds full strength of extra high strength strand, and (7) wide area support eliminates high stress concentrations common to other types of attachments.

Preformed Dead-Ends for false dead-ending are made of galvanized steel for galvanized steel messenger strand of 3/16″, 9/32″, 5/16″, 3/8″, 7/16″, and 1/2″ sizes. *Check NP* 516.

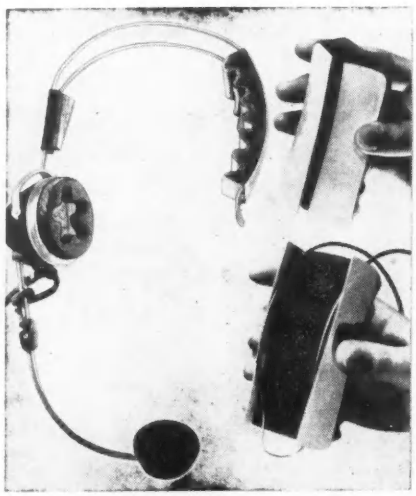
Lineman "wrapping on" a Preformed Dead-End at a false dead-end location.

Headset Accessories

ART ANSON Articles has developed a group of accessories that take away the objections to wearing the headset all day long.

Patents have been applied for on a "Snap-On" Foam Rubber Pad with a plastic back. It can be applied or removed almost instantaneously. The foam rubber area has a special tubular surface which gives a cooler and softer padded effect. This is due to the fact that the pressure of the head pad is supported against the head by these parallel soft tubes, and air circulates in and out the furrows.

The Foam Rubber Ear Piece has a specially designed inside scallop which permits better hearing and more comfort. A mouthpiece cover, "Sani-Tel," is made from nylon stretch yarn with an elastic roller. (No interference with voice transmission.) It can be removed or applied instantly and is made to be washed in soap and water as often as needed.



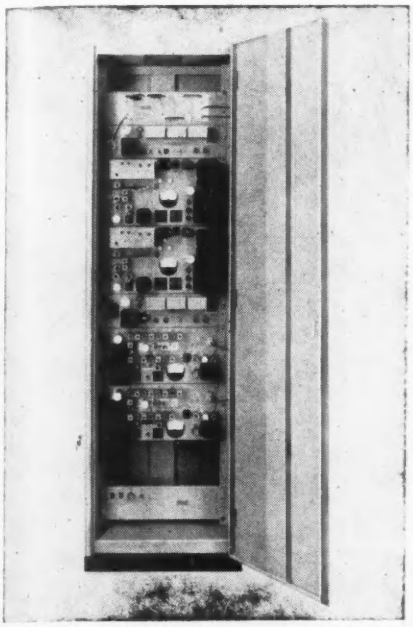
The Temple Pad, a triangular piece of foam adhesive, is worn above the ear piece. *Check NP* 517.

Radio Control Link

A RADIO link for remote control of base radio stations without requiring wire lines has been introduced by Budelman Electronics Corporation. It consists of two Budelman type 14BW frequency modulated multiplex radio terminals which operate in the 952-960 mc band. The equipment meets the new technical standards of the FCC which become effective January 1, 1961.

A type 14BW radio terminal is required at the base station and the remote control point to enable push-to-talk or duplex voice transmission in both directions. The system may be equipped for one voice channel only or, by adding carrier terminals, several voice channels plus tone channels may be transmitted. Hence, the system may be used for controlling a

number of transmitters and receivers and may also be used for intercommunication as well as transmission of data and control and fault alarm



signals. The system may be extended by using radio repeaters to control several base stations at different locations. *Check NP* 518.

Fiberglass Step Ladder

A NEW fiberglass safety step ladder has been added to the HIMCO line of fiberglass ladder products.

A Plymouth four-door sedan has been balanced on the top of a 10′ HIMCO fiberglass step ladder with the help of a heavy crane. Mr. Henry

Hopfeld, the developer of HIMCO ladders, was inside the car at the time. The car rested on a frame made of ladders.

The whole weight, consisting of the car, Mr. Hopfeld, frame, and weights to balance the engine, totaled 4,212 lbs. The step ladder, itself, weighs only 39 lbs. and features a 3″ flat aluminum step with imbedded, nonslip grit.

The frame provided a strength test in itself and consisted of a 16′ HIMCO Tower Ladder with cross-sections of Fire Ladders to hold the wheels. *Check NP* 519.

Extension Screw Anchor

A NEW screw anchor, which can be installed to any depth in soft soils, has been developed by the A. B. Chance Co. The No-Wrench Extension Screw Anchor consists of a forged steel rod, helix, coupling nut, and Tripleye stud.

The stud is removed after the anchor has been installed and the

extension rod takes its place. The Tripleye stud is then screwed into the coupling nut at the other end of the extension rod and the anchoring job is ready to continue. Any number of extensions may be used to obtain the desired depth.

As the name implies, no wrench is necessary to install these anchors. The eye will fit into special adapters available from most hole boring machine manufacturers. *Check NP* 520.

Fastening Tool

AN IMPROVED Shure-Set hammer-in fastening tool has been introduced by Ramset Fastening System.

The handle of the new tool extends from the barrel, away from the striking surface. This handle keeps the

BUDELMAN bec

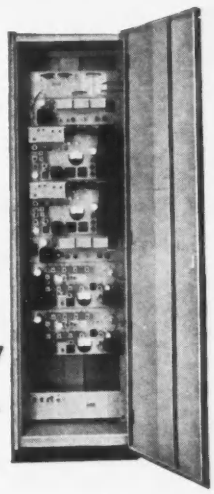
MICROWAVE

BUDELMAN POINT-TO-POINT RADIO SYSTEMS for the

- 2000 MC band
- 960 MC band
- 450 MC band

With capacity up to 30 voice circuits.

Write today for technical data.



BUDELMAN

ELECTRONICS CORPORATION

375 FAIRFIELD AVE. STAMFORD, CONN.

DISTRIBUTED BY: Buckeye Telephone & Supply Co., 1250 Kinnear Rd., Columbus 21, Ohio. Empire Telectronics, 5708 Balsam St., Arvada, Colo. The Engineering Service, Box 178, Butte, Mont. J. W. Flint, 325 Virginia, Ponca City, Okla. Nelson Electric Supply Co., 1123 Slocum St., Dallas 7, Texas. Somerset Telephone & Supply, North Anson, Me. SpaceCom, Inc., 2331 4th St., Santa Rosa, Calif. Tele-Radio Systems, Ltd., 3633 Dundas St., W., Toronto 9, Ont. EXPORT: Westrex Corp., 540 W. 58th St., New York 19, N. Y.

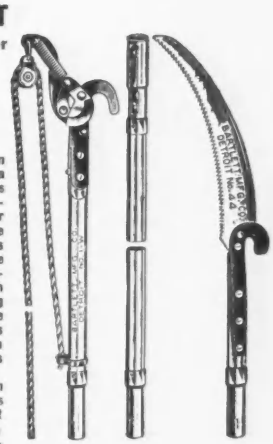
BARTLETT

Compound Lever

"WE" COMBINATION TREE TRIMMER AND SAW. OCTAGON POLE

Double leverage action of pulley gives extra power. Head sections 30" overall. Easily converted from pole pruner to pole saw for large limbs, and extra lengths can be added to make desired length—Capacity of pruner 1¼" with dropforged, sidecutting blade. Saw will handle larger branches. Has 16" curved blade with neg teeth. Other styles available.

The "WE" Combination with 2-6 ft. sections is recommended, since it can be used as an 8½ ft. pole, using one section or a 14½ ft. pole by using 2 sections.



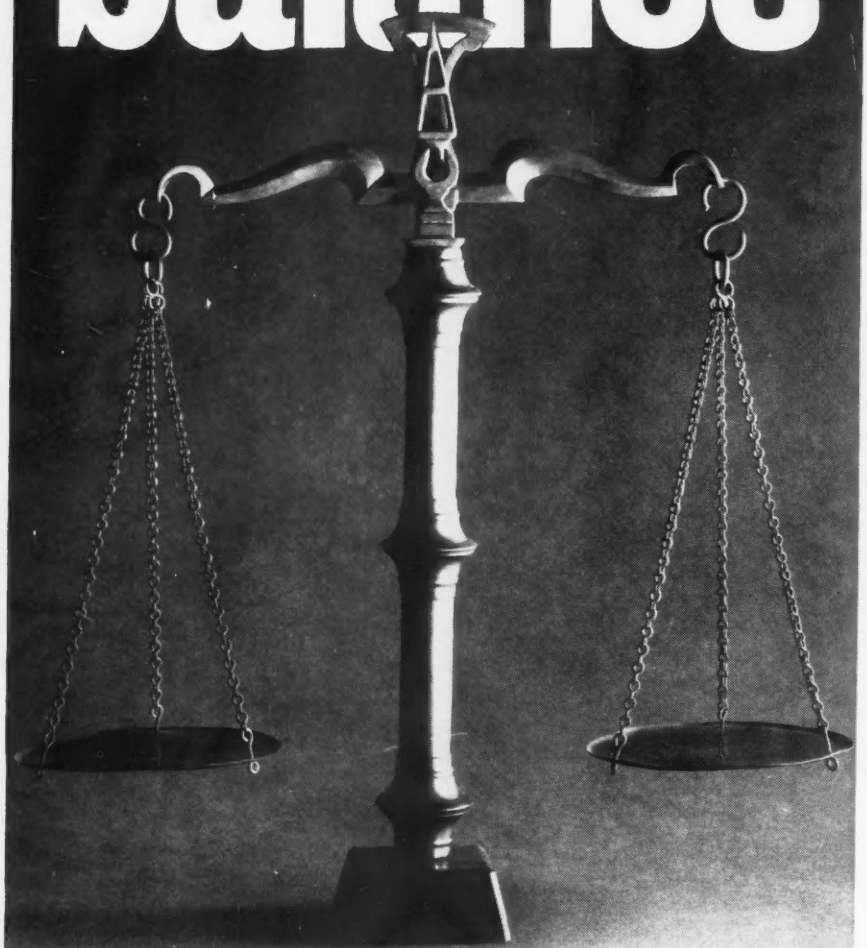
As an added feature! We offer our wire raising tool which fits the extra sections of the WE combination. Specify LC-65 Wire Raising Tool as well as our WE Pike Pole attachment for testing poles.

BARTLETT MFG. COMPANY

3052 E. Grand Boulevard DETROIT 2, MICH.

Balanced breaking strength of the conductors—400 pounds plus, with #18 AWG, 30%, copperweld ⚖ Adhesion of the insulation—strong enough to prevent slipping at maximum load without physical or electrical failure ⚖ Neoprene jacket—tough, abrasion and weather resistant with enough "beef" to prevent buckling at the "P" clamps all the way up to maximum conductor strength. ⚖ Compression cutting resistance—no break-down in "P" clamps up to the overall breaking strength of the conductors. ⚖ In Alphaduct Reinforced Drop Wire there is no "weakest link". The combination of these four features manufactured into every foot of Alphaduct Reinforced Drop Wire, assures you perfect built-in balance. Not every drop wire has it...and remember, it's dated for comparison.

Reinforced drop wire with built-in balance

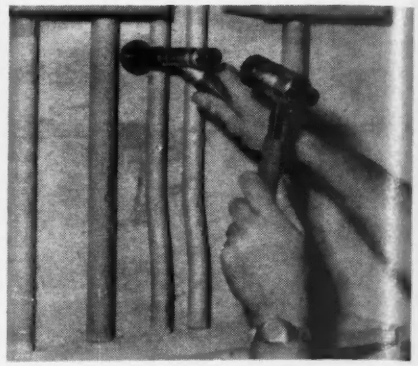


National Distributors: Automatic Electric Sales Corporation, Northlake, Illinois/Leich Sales Corporation, 427 W. Randolph Street, Chicago, Illinois.

ALPHADUCT

Regional Distributors: Buckeye Telephone & Supply Co., Columbus, Ohio/The Lindsay Telephone Supply Company, Cleveland, Ohio/Pankey Supply Co., Charlottesville, Virginia.

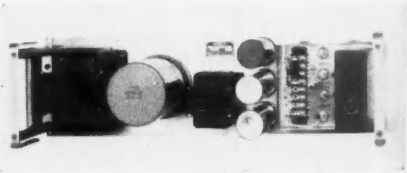
worker's hand away from the area of impact in heavy-duty hammer-and work. The handle also enables workmen to set fasteners more easily in hard-to-reach places such as the limited space between conduit and electrical switch boxes .*Check NP* 521.



DC Converter

COLLINS Radio Company has introduced a new transistorized dc converter, the 526Z-1, for use in its microwave systems in supplying 130 v dc plate voltage from an input of either 24 or 48 v dc. Development of this unit enables complete dc operation of Collins Microwave and Carrier from float charged 24/48 v batteries without any rotating machinery.

The 526Z-1 utilizes four power transistors in a bridge circuit in conjunction with a saturable transformer as a square wave switching oscillator. The stepped up square wave is rectified by a silicon diode bridge with a filtered output.



DC operation adds an extra margin of system reliability by protecting against outages from primary power failure, and, in Collins systems, by eliminating rotating inverters. DC operation also tends to reduce the amount of noise introduced in the system. Savings may be realized with the 526Z-1 in power drain, maintenance and elimination of standby power generators. Collins offers systems operating from several power options — 24 v dc only; 24 and 130

Series PM-30

"Pole-Master"

REACHES TO SIDES AND REAR OF TRUCK . . . ELIMINATES TRUCK JOCKEYING AND TRAFFIC BLOCKING

POWERS *American* offers the only corner-mounted oscillating hydraulic derrick available in sizes for handling 40′, 55′ and 70′ pole-setting jobs with fewer men. The PM-30 can be installed on either rear corner on any style body . . . spots anywhere in a horizontal arc extending from one side of body to the other . . . body loads and reaches low for efficient digger operation without auger extension.

Hydraulic head sheave extension on 55′ and 70′ units increases reach — stretches out to hoist or dig across gullies and fences. PM-30 safety and convenience features include underfloor winch line, electrically-isolated operator platform, four-ton capacity, positive load locking in event of line failure, tremendous turning and holding power.

Descriptive literature and price information is yours for the asking!

Optional self-stowing Series DF-1 "Earth-Master" Hydraulic Digger automatically attaches to sheave extension for use, stows out of way when not in use. Requires no pinning. Telescopic tubing to drive assembly eliminates cumbersome hydraulic hose. Digs up to 24" in diameter and 10′ 6" in depth.

McCABE-POWERS BODY COMPANY 5900 No. Broadway, St. Louis 15, Mo.

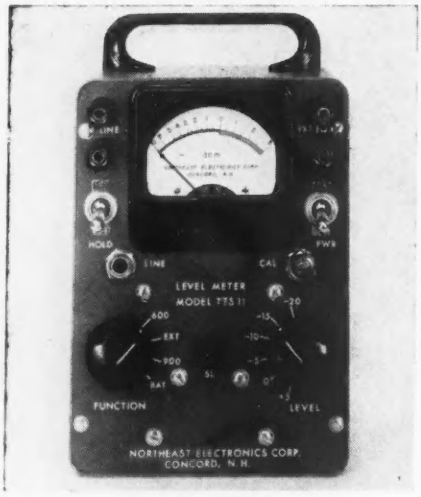
625 Cedar St., Berkeley 10, Calif. • (L. A. Branch) 12121 Los Nietos Rd., Santa Fe Springs, Calif. • 5525 S. E. 28th Ave., Portland 2, Ore.

v dc; 48 v dc only; or 48 and 130 v dc — enabling selection of the best combination to integrate with existing battery plants. *Check NP* 522.

Transmission Test Equipment

THE NORTHEAST Electronics Corporation has announced the addition of three new models to its line of transmission test equipment for the telephone industry.

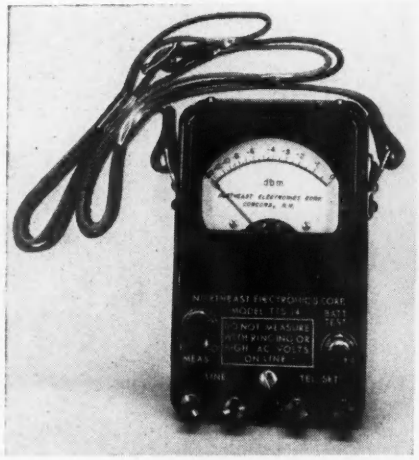
The Model TTS 11 is a transistorized level measuring set designed to measure levels from +8 dbm to —30 dbm on either 600 or 900 ohm circuits. Its small size (7″ long, 5″ wide, and 4½″ high) and light weight (5 lbs.) renders it portable.



Model TTS 11

Features of the Model TTS 11 are a step attenuator, line jack holding and dial-through provisions, and checking of the self-contained battery. Two 9-Volt transistor batteries power the unit. These batteries will last approximately 100 hours for intermittent operations and 0.1 db change in calibration. A function switch permits selecting the desired terminating impedance, making a battery test, and connecting the line terminals directly to a pair of EXT terminals. The frequency response is within 0.1 db from 200 to 7,000 cps.

The Model TTS 14 is a single range transistorized level meter with dial through provisions, designed to measure levels from 0 dbm to —20 dbm over a wide frequency range. Measuring 3½″ wide, 5¾″ long, 2⅛″ high (plus height of terminals) and weighing 1½ pounds, unit is operated from a standard 9-Volt transistor battery with a life of over 200 hours of intermittent operation, 140 hours of continuous operation. Other features of this meter include universal binding posts and a battery check. The instrument has 2 metal binding posts marked LINE and 2 marked TEL SET. These accept banana plugs, spade lugs, wire, and clip leads. A leather carrying strap is supplied with the meter.



Model TTS 14

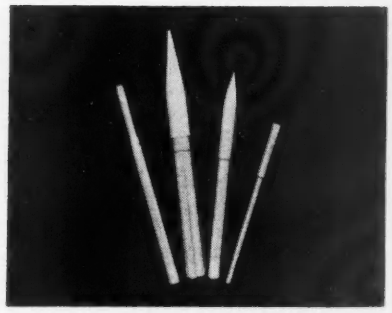
The Model TTS 15 is a transistorized transmission test set designed to measure levels from +8 dbm to —30 dbm, and to supply output levels up to 0 dbm at 6 frequencies. Signals can be supplied and measurements may be made on either 600 or 900 ohm circuits. The self-powered unit features simultaneous Send and Receive, dial-through and talk provisions, and a frequency accuracy of 2% from 50 degrees F. to 100 degrees F. A calibration control for the Receive section and a Send level control for the Send section are available on the front panel of the meter. *Check NP* 523.

Model TTS 15

Soldering Iron Tips

ARMOR-CLAD electric soldering iron tips, made from copper rod and iron plated with electrolytic iron, have been announced by Engineering & Electronic Devices, Inc.

Permanently attached special alloy sleeves around shanks prevent freezing and eliminate need for removal of tip to prevent sticking.



The tips eliminate down time, and provide uniform joints. Special Armor-Cladding assures no difficulty in tinning or maintaining a tinned ready-to-use tip, and protects against pitting and oxidation. *Check NP* 524.

NEW PRODUCTS' DEPARTMENT **10-1-60**
Telephone Engineer Publishing Corporation
7720 North Sheridan Road, Chicago 26, Illinois Date.....
ATTN: Dick Reynolds

Please send me additional information concerning the following New Products.

NP 516..... NP 517..... NP 518..... NP 519..... NP 520.....
NP 521..... NP 522..... NP 523..... NP 524.....

NAME.....POSITION.....
COMPANY.....
ADDRESS.....
CITY.....ZONE.....STATE.....

I am a subscriber to TE&M. ☐ Yes ☐ No (check one)

We are inviting you

DAN McNULTY
and
VINCENT HALLORAN
Invite you to visit
Telephone Repair & Supply Co.
during the

63rd Annual Convention of the U.S.I.T.A.

A Personal Welcome Awaits You
In ROOM 516 at The Conrad Hilton Hotel

We will have on display

Loud Ringing Extension Bells

Slug Deflectors for Paystations

Nicropress Sleeves and Tools

"Ankoseal" Cable

Drop and Interior Wire

Surplus Army Field Wire on One-Mile Reels for Emergencies

Rebuilt DIALS
"LIKE NEW" Dial Telephones complete with DIAL

Handset Magneto Wall Phones

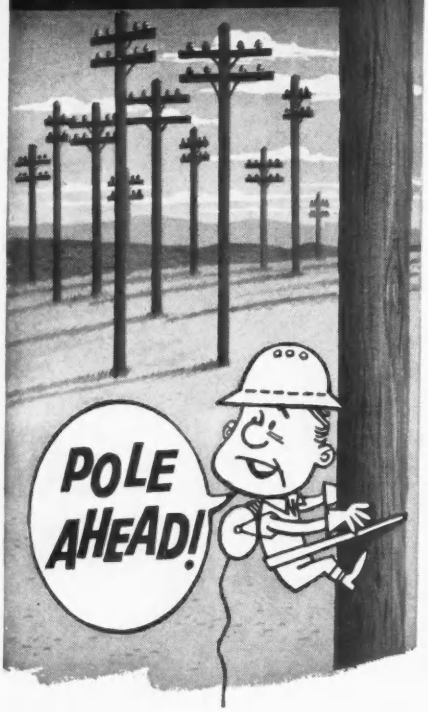
Switchboard parts for Magneto and for Common Battery

Ringers Rebuilt To High Impedance
DIAL Rebuilding

WE BUY SURPLUS TELEPHONES

TELEPHONE REPAIR & SUPPLY COMPANY, 1760 Lunt Ave., Chicago 26, Ill.

CABLE PROTECTION PROBLEMS?



bring on the

Cablegard®

It pays to keep Cablegard* on hand . . . for there's no faster, lower-cost way to physically protect cable anywhere, above or underground.

Cablegard is a split-pipe sheath that *clamps around* cable. You get the protection of solid-wall pipe, yet you install in minutes – with no special skills needed. And with Cablegard, you can eliminate most cutting and splicing!

You'll be miles and dollars ahead – on every job – with Cablegard. Contact your equipment supply house or write direct to Butler Manufacturing Company for details.

Exclusive clamping tool quickly clamps halves together.

*Patent pending

CELEBRATING 60 YEARS BUTLER FABRICATING METALS

BUTLER MANUFACTURING COMPANY
BUTLER CONTRACT MANUFACTURE DIVISION
7558 East 13th Street, Kansas City 26, Missouri
Manufacturers of Metal Buildings
Plastic Panels • Equipment for Farming, Transportation, Bulk Storage, Outdoor Advertising

"How To Get Your Money's Worth"

(Continued from page 53)

time that must be allocated and scheduled to allow one to prepare for, attend, and take part in his industry's conferences.

Fifth Facet: — Drawing specific conclusions from generalizations can be misleading. To avoid this hazardous possibility, each reader at this point might well review his recent investments of the type outlined in the Third and Fourth Facets above in order to be better prepared to weigh them against the short- and long-range benefits that can accrue from such sources and methods as will be pointed out shortly hereinafter.

The Key Decision

NOW THE TOTAL import of all considerations, including those of time and money, invested in attending any one telephone meeting when balanced against the definable results of that meeting can, of course, produce a variety of answers to the question, "Was it really worth it?"

In marginal cases we sometimes need rationalization as to just why the meetings many of us attend—and, perhaps, so many more that we should be attending — are an important and necessary part of the American way of voluntarily getting things done that need to be done.

In any case, marginal or otherwise, we can arrive most easily and surely at the best decision by taking a positive approach and asking the constructive question, "What can I do to make my time at a meeting profitable?"

Perhaps there are even better ways of phrasing this basic question. For example, some other ways of expressing it are as follows:

"Does it pay to be alert to changing times? Why is it easier to succeed by having an open mind? By being willing to listen? Willing to learn? Willing to change?"

Regardless of the exact wording that this question may take in each individual's mind, the task remains for us to convince ourselves — in case some are not so convinced — that telephone meetings are the most economical and productive method of becoming informed of recent trends, techniques, and developments as well as being exposed to a first-hand exhibition of products and equipment available through the co-operative atmosphere of manufacturers' and suppliers' exhibits.

Advance Planning Required

NATURALLY, the detailed answers to these and similar questions revolving around how to get your money's worth from going to and participating in telephone meetings will differ according to specific objectives, circumstances, and tastes. However, one of the vital, but often insufficiently emphasized, considerations that will substantially affect the success of your efforts is how well you organize your mission to attain the goals necessary to justify the trip.

As a matter of fact, the outcome of an investigation reveals that the greatest measure of success for any meeting — large or small — is based on *the degree of planning undertaken by the participant or delegate himself prior to arriving at the meeting headquarters.*

Thus we have official confirmation of something that many have known, many more have suspected, but few have done enough about, namely, that adequate advance planning and preparation are two of the principal mainstays in any complete scheme of action aimed to "bring home the bacon" from industry-sponsored meetings.

Now "adequate advance planning" means and involves more — far more — than just making a hotel room reservation and getting a supply of American Express traveler's checks. Actually, the purpose of a plan of action, in this case it could be labeled "Operation USITA," is to establish a balanced program for the effective use of one's time during the course of the meeting itself, *and,* in addition, *before* and *after* the meeting proper.

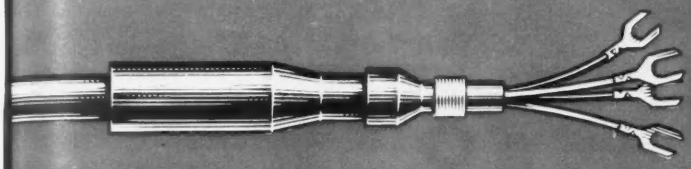
If there is any "trick" at all to

AE

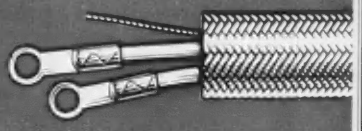
All your replacement cord problems are solved quickly and efficiently at AE. That's because we stock a complete line of standard Comco cords and can supply "specials" quickly. All Comco cords are guaranteed for top-quality performance.

Comco's new plastic jacketing adds longer life and noise-free transmission to cords. It's more durable and crack resistant than Neoprene. Comes in black or your choice of 10 colors.

Your AE representative will give you full details on the entire Comco line. Next time you need cords, get the finest with fast, friendly service. Get Comco cords from Automatic Electric.



stocks a complete



line of Comco cords

- *Switchboard cords*
- *Handset cords for any make of phone*
- *Standard or special lengths*
- *Standard or special finishes*
- *Straight cords and coiled cords*

AUTOMATIC ELECTRIC

Subsidiary of

GENERAL TELEPHONE & ELECTRONICS

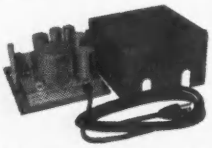
GENERAL SYSTEM

warehouses:

Northlake	2915 Moore St.	2360 N. W. Quimby St.	158 Corliss Avenue	2021 Main St.
Illinois	Richmond 21, Va.	Portland 10, Ore.	Johnson City, N. Y.	Kansas City 8, Mo.
Fillmore 5-7111	ELgin 8-9280	CApital 3-7244	RA 9-4996	HArrison 1-7575

IMPROVE
the operation of your
TELEPHONE LOUDSPEAKER SYSTEMS
for Happy Subcribers . . . More Revenue.
Install the new HUGHEY & PHILLIPS
Type GB-444 Compressor Amplifier.
Provide **Automatic Level Control . . .**
and also **Reduce** Loudspeaker-handset
Feedback.

HUGHEY & PHILLIPS
Model GB-444A
Compressor Amplifier



Furnished in attractive bell-box type case for wall mounting . . . with standard apparatus box mounting dimensions. Only two tubes . . . two watts output. Model GB-444C provides facilities for power line voltage reduction during standby periods. ALSO IMPROVES SPEAKER-PHONE OPERATION. Request Descriptive Bulletin HPS-156.

Rack mounted Compressor Amplifier for Automatic Level Control in Line Monitoring applications.

HUGHEY & PHILLIPS GB-448C
Compressor Amplifier
Two watts . . . 3½" rack space
Request Descriptive Bulletin HPS-157

A NEW STANDARD IN
POWER-PROGRAM AMPLIFIERS.
for High Quality
MULTIPLE PROGRAM LINE FEED
. . . Monitoring . . . Paging . . .

HUGHEY & PHILLIPS LA-429A Amplifier

Only two tubes . . . 3½" rack space
Ten watts . . . 1% Distortion
50-15,000 cps
4, 8, 16 ohms & 70 volt line output.

Accessory Network provides multiple feed for TWENTY program or intercept lines.

Request Descriptive Bulletin HPS-158

Distributed by GraybaR

PROGRAM LINE EQUALIZER for non-loaded telephone cable circuits. Provides for correction of non-uniform frequency transmission in the range from 35 to 8000 c.p.s.

HUGHEY & PHILLIPS LE-123 Equalizer
LE-123 Equalizer is of the shunt type, with a continuously adjustable series resistance having a dial calibrated in ohms.
The LE-123 Equalizer will provide equalization within 1 DB for up to 21.5 miles of 16 ga. non-loaded cable. Request Descriptive Bulletin HPS-155.

DON'T MISS THESE AT
USITA CONVENTION
Rm. 639A, or GRAYBAR Rm. 618

HUGHEY & PHILLIPS, INC.
3200 N. San Fernando Blvd., Burbank, Calif.

accomplishing one's objectives in a telephone meeting, one of the main parts of that "trick" is to arrange to provide sufficient amounts of time at the right places to carry out your prearranged plan which, in it's simplest form, consists of nothing more than a schedule of things to do listed in the order of their importance.

Anyway that you look at it, *time* is one of the most definitely limited and, therefore, precious items that you have to work with. Properly managed, time is on your side, working for you.[1]

Therefore, if you do anything at a meeting that could have been done equally well or better in advance of the meeting, such planning can and should be improved.

With this basic approach in mind, let's now review some common and uncommon items that methodical people include in their working plans for the periods before, during, and after conferences, meetings, and conventions.

Do First Things First — And Early!

BEFORE leaving for the convention take care of the following matters.

(1) Make complete travel plans and transportation arrangements sufficiently in advance of the meeting to guarantee that the span of time between your arrival at and departure from the meeting will provide reasonably adequate opportunities for you to do the job that you have decided must be done. Unless there are compelling reasons to the contrary, a safe plan to follow to secure maximum results is to come early and stay late.

(2) Request hotel reservations far in advance of the meeting to avoid disappointment in either the kind, rental rate, or location of accommodations. In case of large meetings, several months in advance is none too much. Surprising as it may seem, there are many important angles to this necessary step. Several aspects are so frequently overlooked that they warrant being mentioned here even at the risk of being repetitious to a few seasoned travelers. After all, not everyone is a professional traveler — and even if we were, the hotels change their ground rules from time to time.

(3) It will expedite hotel reservation negotiations when writing or telephoning the convention hotel, if you will address your letter to or ask for the reservation manager *and* mention the name of the meeting that you will attend. In this case, it will be the United States Independent Telephone Association meeting. For any hotel reservation to be complete, it should contain not only the *date* of your arrival but it also should include your best estimate of the *hour* that you will arrive at the headquarters hotel. Instruct the hotel to confirm the receipt of your reservation request.

(4) In addition to (3) above, your hotel reservation request should specify the type of room (single, double, twin, twin de luxe, and suite) you seek *and the price range of the room you want.* If you are not familiar with the current minimum and maximum room rates in effect, contact the Reservation Manager at the Conrad Hilton Hotel, 720 South Michigan Avenue, Chicago 5, Illinois, telephone number WAbash 2-4400, and request that this information together with a standard room reservation postal-card form be furnished to you. Armed with this set of facts far enough in advance of the meeting, you will have a wide range of choices. As a result, you can conveniently and intelligently decide upon, reserve, and actually get the accommodations that will satisfy both you and your budget.

(5) Keep the hotel reservation manager informed of your change in travel plans in case unforeseen developments beyond your control crop up to interfere with your arrival date. The advantage in doing this is that you will receive preferential treatment by the hotel over those who were not considerate enough to do so. After all, let's be thoughtful

[1] "*Management of Time*," *by J. T. McCoy. 178 pp. Published in 1959 by Prentice-Hall, Inc., Englewood Cliffs, N. J. Price* $3.50.

NEW GAT® B-Beam Clip

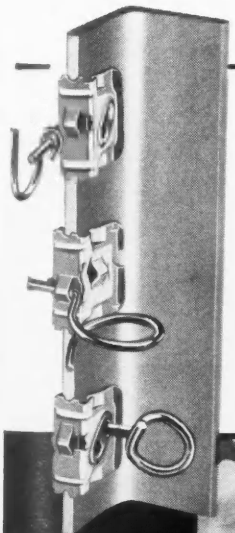
Recently announced by Erico Products, Inc. is the new "B" beam clip. Designed for and approved for telephone use to replace present universal Clamps and/or Support Brackets. This product has found additional markets in the electrical contracting field, sound and intercommunication industries.

For use with threaded or unthreaded Bridle Rings, Drive Rings and other low voltage Cable, Wire and Copper Thermostatic Tubing Supports.

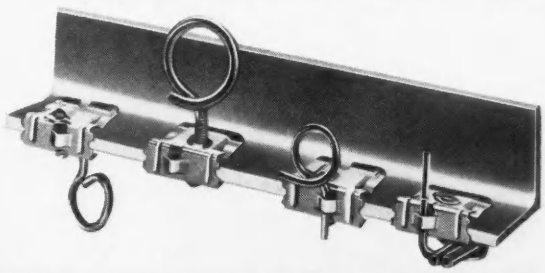
Recommended Maximum Load Limits:

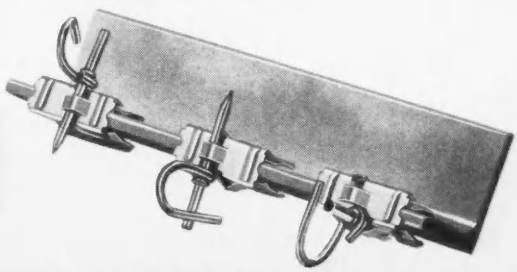
Horizontal Pull 30 lbs. Vertical Pull 50 lbs.

This clip will fit any flange from ⅛" thru ½" thickness regardless of flange taper.

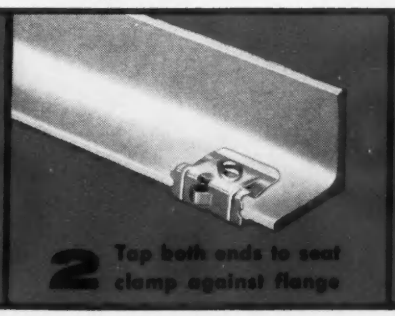


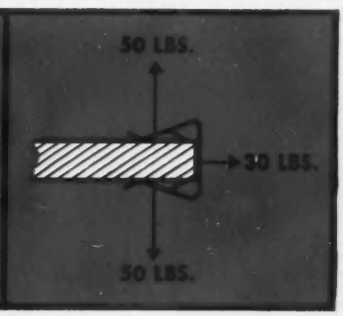
INSTALLATION APPLICATIONS





HOW TO INSTALL





CADDY® FASTENER Div.

ERICO CADWELD PRODUCTS, INC.
2070 EAST 61st PLACE • CLEVELAND 3, OHIO

From central office to subscriber station

AE

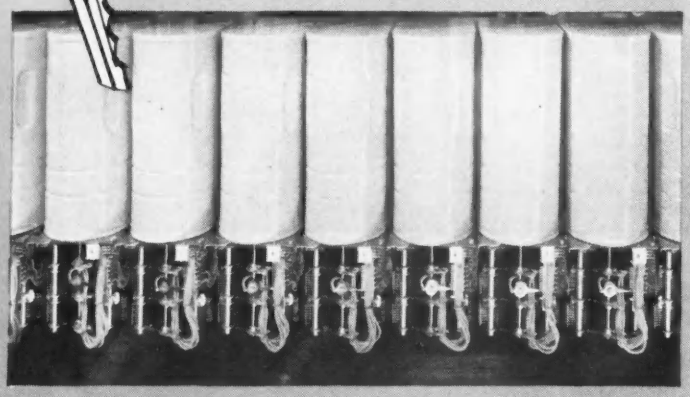
HAS THE KEY TO YOUR

See these door openers at U

ROOM 504

YOUR KEY TO LOWER OPERATING COSTS

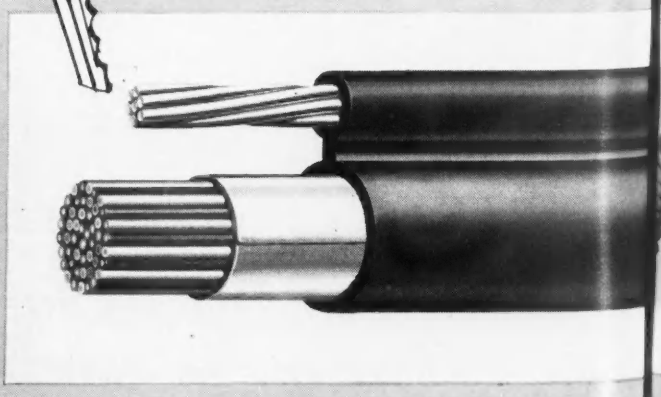
AE Dial equipment. From small unattended exchanges to large multi-office networks, telephone men choose Strowger. What's the reason for this acceptance? You'll find out when you see our display in Room 504.



ROOM 509

YOUR KEY TO BETTER TRANSMISSION

New Figure 8 Qualpeth. Combines cabl and messenger in a single polyethylen jacket. Eliminates cable spinning! Cost less installed than cable and messenger pu up separately.



YOUR KEY TO BIGGER PROFITS

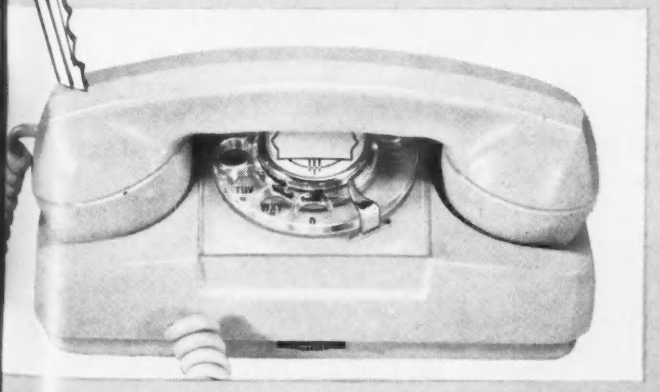
PROBLEM

rs the U. S. I. T. A. Convention

ROOM 505

YOUR KEY TO INCREASED REVENUE

Starlite* phone, the little new phone with the soft green light. Rubber base prevents phone from moving when you dial. Choice of six decorator colors. Ask for a demonstration of new Starlite phone in Room 505.



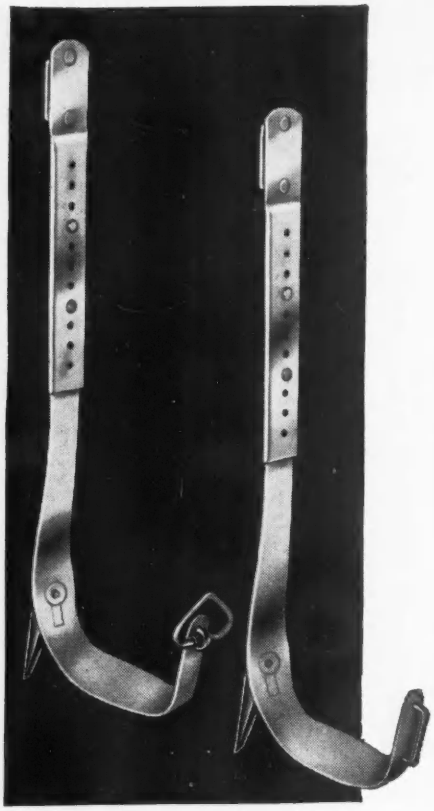
AUTOMATIC ELECTRIC

Subsidiary of

GENERAL TELEPHONE & ELECTRONICS

GENERAL SYSTEM

* STARLITE is a trademark of Automatic Electric Company



No. 1959-AR No. 1958-AR

NEW KLEIN
Replaceable Gaff Adjustable Climbers

These new Klein Replaceable Gaff Climbers assure maximum quality and safety. We recommend leg irons be replaced after three sets of gaffs have been used.

The easily replaceable gaff is held in position by a self-locking screw. Full impact is absorbed by the gaff and leg iron. No load is transmitted to the screw.

Adjustable to 14½, 15, 15½, 16, 16½, 17, 17½, 18, 18½ and 19 inches. Made in matched pairs, right and left. Available with triangular ring at ankle or riveted ankle loop. Aluminum finish. Every climber individually tested.

WRITE FOR BULLETIN 559

Bulletin 559, giving full information on Klein Replaceable Gaff Adjustable Climbers, will be sent on request.

ASK YOUR SUPPLIER

Foreign Distributor: International Standard Electric Corp., New York.

Mathias KLEIN & Sons
Established 1857 Chicago, Ill., U.S.A.
7200 McCORMICK ROAD • CHICAGO 45, ILLINOIS

— the hotels have their side of this reservation problem, too.

(6) Make prior contacts and appointments with those whom you may have specific business from operating telephone companies as well as representatives of manufacturers and distributors. These arrangements should include a call upon your industry's magazine publishers and editors at their convention headquarters. Remember, while you are attending this particular three-day meeting you will have to take time out to eat nine or ten meals. Luncheon conferences are an accepted practice and they can be a pleasant interlude at the same time that they are used to efficiently transact business. If you are really pressed for time, breakfast and dinner conferences can be scheduled, also.

(7) Prepare a list of specific subjects to be discussed at the conferences set up in (6) above. These discussion items should be put on paper because excitement and confusion frequently have a way of causing one to forget important points to be covered in such prearranged, extracurricular get-togethers.

(8) Check over the advance issue of the convention program when it is printed a few weeks before the meeting in your copy of *Telephone Engineer & Management*.[2]

(9) Plan a preliminary day-by-day and hour-by-hour schedule of activities based on your findings in (8) above and your appointments made in (6) above. Prepare the initial draft of this all-important schedule on a fairly flexible basis so as to provide time for unscheduled events, informal meetings, visits, inspection trips, and other unanticipated activities not necessarily or normally included in advance editions of programs.

(10) Secure and take along to the meeting a convenient-sized folder for carrying your important papers such as your detailed convention working schedule described in (9) above, as well as your list of appointments and discussion subjects outlined in (6) and (7), your hotel reservation confirmation, advance program, list of exhibitors, general notes, working papers, business cards, blank note paper, etc. Be sure your name and *convention address* is in the folder just in case you misplace it.

(11) Register by mail in advance of going to the meeting by writing to the United States Independent Telephone Association, 438 Pennsylvania Building, Washington 4, D. C. This will prove to be a time-saving convenience.

Complete Plans Upon Arrival

AFTER you have gotten settled down in your room at the convention hotel, take care of the following items next:

(12) Report early to the convention registration desk on the third floor of the Conrad Hilton Hotel and get your convention identification badge which should be ready and waiting for you if you acted on suggestion (11). There you will be given your copy of the *official* program. Also, at this same time, secure your tickets for the highlight of the meeting, the annual USITA banquet and show, before all the tickets are sold.

(13) Wear your badge at all times — it is your pass to all meetings, sessions, forums, exhibits, and convention events. Equally important, your badge helps you to get acquainted with others as they get to know you. The value of being acquainted, often on a first-name basis, with the responsible individuals in any organization can hardly be overemphasized.

(14) Check the official convention program against your preliminary day-by-day calendar that you brought with you [see (9)], and make last minute changes, additions, and corrections. Now is the time for you to plan your free-time activities in more detail.

(15) Your final hour-by-hour schedule [see (14) above] should include a generous allotment of

---

[2] "*How to Profit from Studying Your Industry's Publications*," by *T. DeWitt Talmage*, "*Telephone Engineer & Management*," *Vol.* 63, *No.* 12, *June* 15, 1959, *pp.* 38-39, 79-82, *and* 84.

time for inspecting and discussing the many telephone equipment and supply displays. Get well acquainted with these friendly people at their exhibits. They are in a position to help you with new products and new applications of old products and you are in a position to advise them of new ideas which may solve mutual technical problems.

(16) Keep a list of new acquaintances made in (15) above and elsewhere at the meeting and note special items of interest and abilities about them. You may wish to contact them in the future.

(17) Take special pains to be on time at all sessions and appointments.

(18) Know your limitations. Remember the old adage — overabundance of food and drink and underabundance of sleep make Jack a dull boy. Of course the reverse is true when all work and no play has a similar effect.

(19) Pass along your honest opinion of the convention's program to your Association's officers, directors, program committee, and your co-workers. It's only through your comments and suggestions that errors and omissions can be rectified and improvements made for the future. In the final analysis, the meeting was held for your benefit. If it hit the bull's-eye, tell them that, too.

(20) Do not hesitate to compliment or recognize outstanding contributions to the convention program. True, most associations send each contributor a formal message of appreciation for his efforts at the conclusion of the meeting. But the most heart-warming comment a speaker can receive is one from the man who benefited from his remarks. So offer each contributor some encouragement because many times this is the best reward he will receive — the satisfaction of a job well done.

Conclusion

FROM WHAT HAS been outlined, it is apparent that trade associations, in the process of performing those duties not carried out directly by private enterprise or the government, sponsor meetings which pro-

Room 556
U.S.I.T.A. Convention
October 9-12

New New — New New — New New

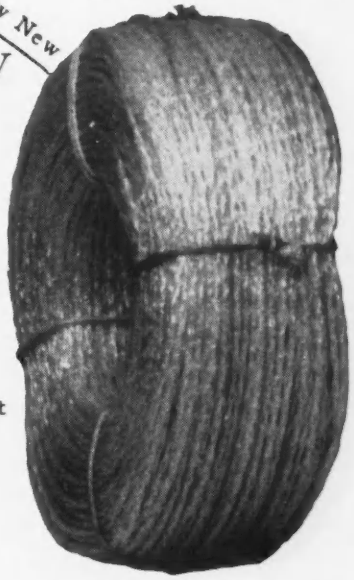
A Revolutionary NEW

LASHING

MATERIAL

You'll be surprised at its Light Weight

You'll be amazed at its Strength



Cable Spinning Equipment Company

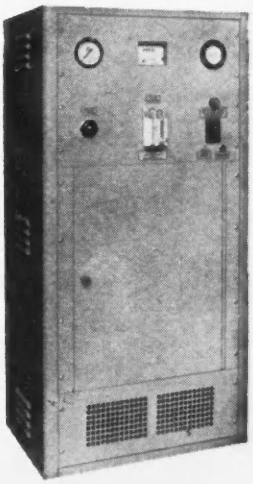
3100 Topeka Avenue

CE 2-7234 or CE 2-7235 Topeka, Kansas

save maintenance $$$

MODEL A
Air Compressor Dehydrator

S&G



- Completely automatic in operation
- Automatic drain and Power Failure Relay
- Incorporates the latest safety features

Exchange equipment designed to supply chemically dry air for telephone cables, aerial and underground, this unit can supply as many as 50 cables. It is equipped with volume recording air meter, high and low pressure alarm switches, humistat and hour meter.

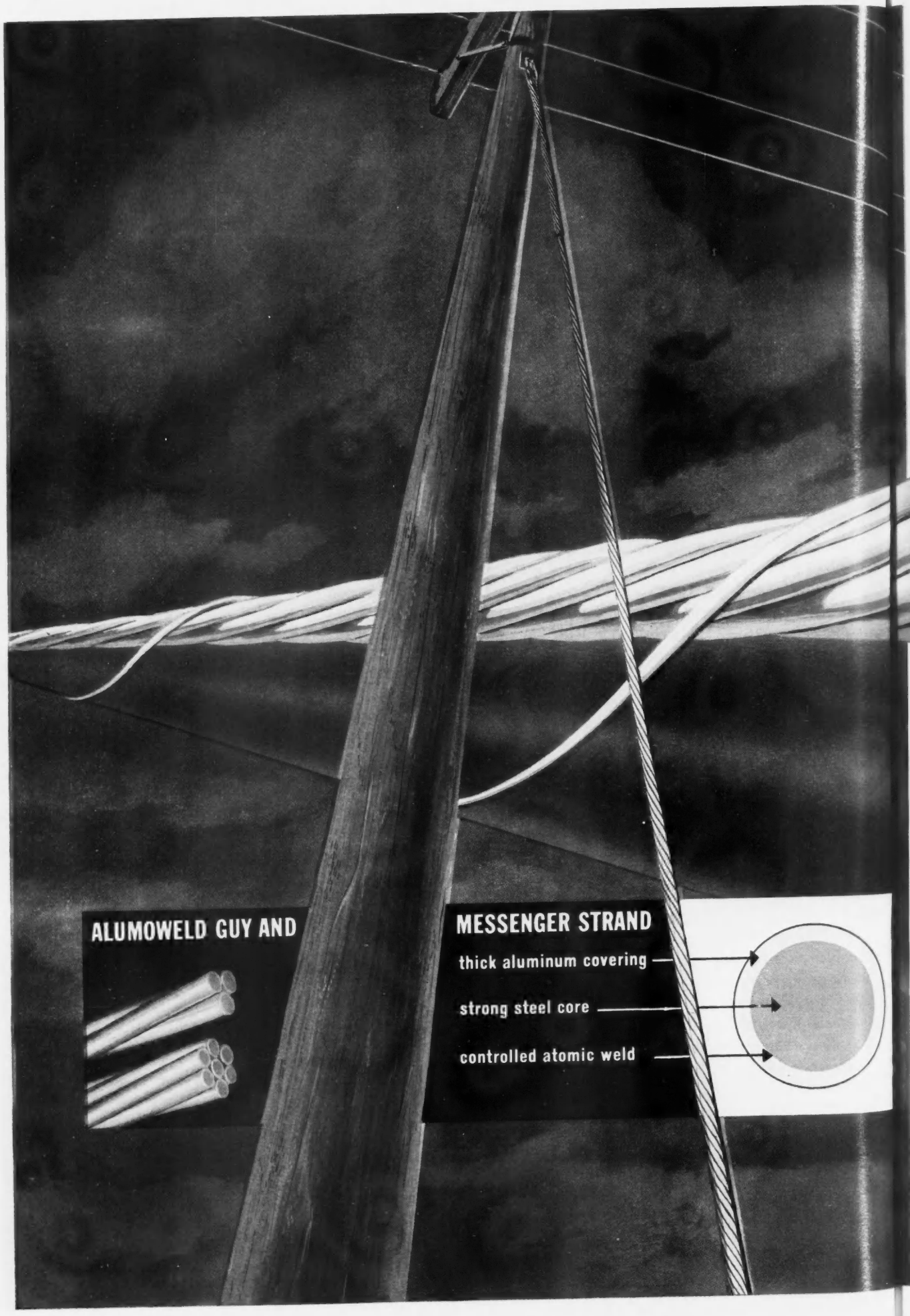
S & G developed the Dry Air Dehydrator used extensively by many operating companies to protect telephone cables from moisture. Many hundreds of these units are now operating satisfactorily and economically.

order through your favorite distributor; for information, write or phone

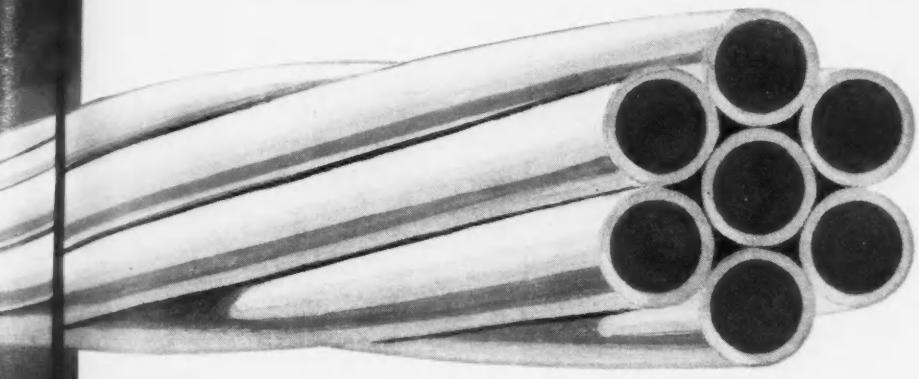
S & G MANUFACTURING CORPORATION

DESIGNERS AND MANUFACTURERS OF
SPECIAL EQUIPMENT FOR UTILITIES AND CONTRACTORS

1017 Magazine St. • P. O. Box 1309 • New Orleans 10, La. • JA 5-3142


ALUMOWELD GUY AND
MESSENGER STRAND
thick aluminum covering
strong steel core
controlled atomic weld

Are you taking advantage of ALUMOWELD STRAND for guys and messengers?



HIGH STRENGTH-TO-WEIGHT RATIO . . . PERMANENCE . . . LOW COST . . . AVAILABILITY

You get the benefits of high-strength steel and pure aluminum—at low initial cost—when you use Alumoweld for your guys and messengers.

Since Alumoweld will not rust or corrode, its high strength is permanent. Costly maintenance is eliminated because Alumoweld Guys and Messengers stay up for the life of the installations they support.

Alumoweld is the only strand made with wires having a *thick* aluminum covering—25% by area. And the aluminum cannot crack, flake or peel . . . it is interlocked with the steel core by a ductile weld that is permanent under all operating conditions.

The rugged strength of Alumoweld is the same as steel, but Alumoweld will last far longer. In fact, Alumoweld has the same long life and corrosion resistance as solid aluminum.

Weighing 18% less than steel of comparable diameter, Alumoweld is easier to handle. Moreover, Alumoweld has a higher strength-to-weight ratio than any other strand used on overhead lines. For messengers, you can string safer, longer spans with less sag.

It's easy to see that Alumoweld offers economies you can't afford to pass up. Put this light-weight, high-strength strand on your lines and prove it for yourself. Write today for Engineering Bulletin E.D. 3000.

SUPPLIES OF ALUMOWELD STRAND ARE AVAILABLE FOR PROMPT SHIPMENT FROM OUR WAREHOUSES IN NEW YORK, CHICAGO, PITTSBURGH AND MEMPHIS.

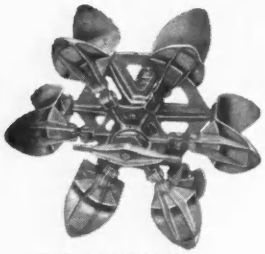
ALUMOWELD®

COPPERWELD STEEL COMPANY
WIRE AND CABLE DIVISION
Glassport, Pa.

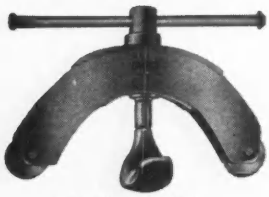
For Export: COPPERWELD STEEL INTERNATIONAL COMPANY, New York

GENERAL MACHINE PRODUCTS COMPANY, INC.

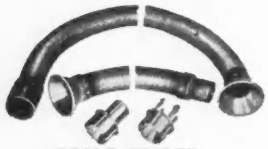
Old Lincoln Highway at Pa. Turnpike, Trevose, Pa.



C-R POWER REEL



SLACK PULLER



CABLE FEEDER

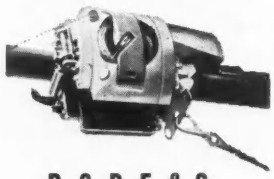
GMPCo

AERIAL TENTS
CABLE BENDERS
CABLE BLOCKS
CABLE LASHERS
COAXIAL CABLE TOOLS
LASHING WIRE
CLAMPS AND GRIPS
PORTABLE & POWER REELS

Graybar Distributed by Graybar Electric Company

PRESSURE TESTING KIT

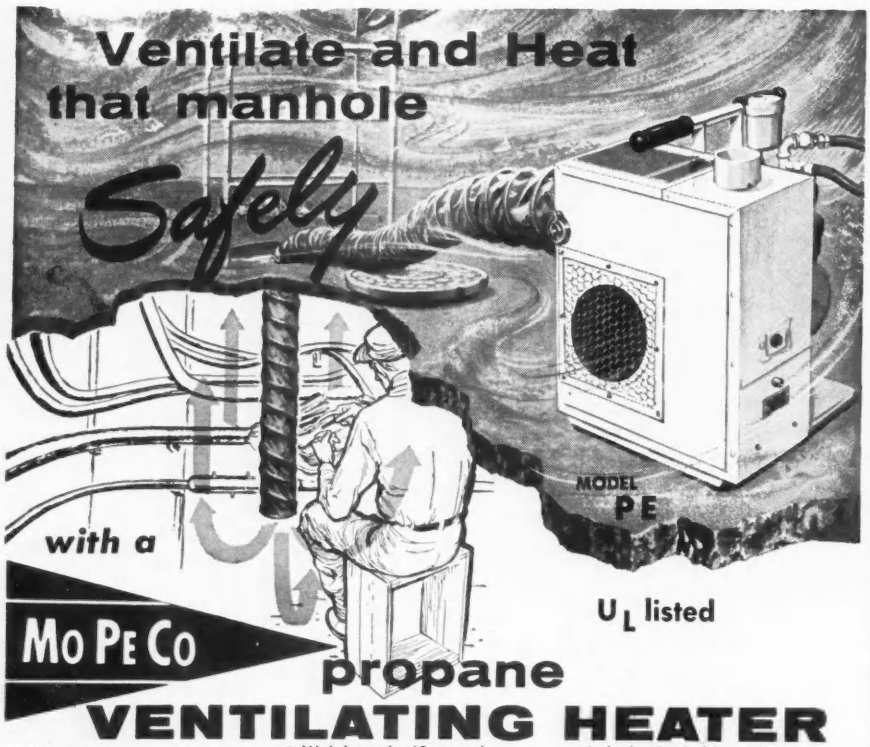
COMPOUND



B, C, D, E, & G CABLE LASHERS

Special Purpose Tools To Specifications — Catalog on Request

Over 600 various items of Line Construction Tools, Maintenance & Pressure-Testing Equipment in stock for immediate shipment



Fresh Air . . . heated fresh air in one portable unit!

- Weighs only 62 pounds
- 300 to 800 cfm fresh air
- 10° to 96° temperature rise
- Propane or Butane fuel
- 10' L.P.G. hose standard
- Safe fresh air blown into manhole at all times.
- Eliminates manhole explosion and oxygen deficiency accidents.

Order through your favorite distributor.

WRITE FOR ILLUSTRATED BROCHURE SHOWING ALL MoPeCo MODELS.

Write or Call MORRISON-PELSUE COMPANY

2001 South Bannock Street • RAce 2-2834 • Denver 23 Colorado

vide the programs and informal contacts that create the atmosphere needed to stimulate individual growth to the maximum. If true receptivity is present, and if an orderly approach as described in this article or equal is taken, there is no real limit to the possibilities of growth. Each organization in turn benefits because a company is only a reflection of the people that work for and represent it.

What each telephone company and each telephone man must do is not worry about their problems but recognize them, analyze them and then roll up their sleeves and do something about them. Attending telephone meetings will help you to do all of these things. If you will go after this help in an organized fashion, you will profit from this assistance just that much sooner — and perhaps better. — *T. DeWitt Talmage.*

Budelman Review

B. E. C. REVIEW is a new bimonthly publication containing news and technical information about microwave radio and telephone communications. A free subscription may be obtained by writing on a company letterhead to *Robert Feistel, Sales Manager, Budelman Electronics Corp., 375 Fairfield Avenue, Dept. TE&M, Stanford, Conn.*

Treeguard Catalog

THE FANNER Manufacturing Co. has announced a new and expanded catalog of its complete line of plastic Treeguards for protection of overhead lines from tree-limb abrasion.

It contains complete selection and specification data for single, duplex, triplex, quadruplex and multi-cable conductors in a wide variety of shapes and arrangements . . . for 383 covered conductor and 50 solid, stranded and ACSR conductor applications. Lists Treeguard diameters, wall thicknesses, weights and catalog numbers. All information is arranged for quick finding, easy use. Request *Catalog Section TG, The Fanner Manufacturing Co., Electrical Products Division, Dept. TE&M, Brookside Park, Cleveland 9, Ohio.*

Panhandle Electric Sales, Inc.

Cordially Invites You To An

Exhibition Of The Most Advanced

Designs In

Transistorized Carrier Equipment

"X" Urban "X" "LL"

To Be Held In Room 654A At The USITA Convention

October 9, 10, 11, 12

LINE CLEARING
PRUNERS

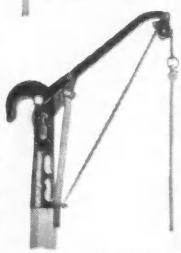
FAST CUTTING
DEPENDABLE
HEAVY DUTY

Designed and manufactured with utility line clearing in mind. Rugged, heavy duty tools that are famous for their fast, easy cutting action.

POLE PRUNERS

No. 11
A strong, durable, easy cutting pruner head that cuts up to 1" branches with ease. Open stock spruce extension poles in 6 foot sections, with telescoping aluminum joints.

No. 12
Cuts up to 1½" branches. Pruner head is malleable iron casting, husky, unbreakable. Smooth, easy cutting action.

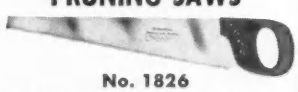


LOPPING SHEARS
Heavy duty, fast, easy cutting loppers designed for utility use.

No. 75
Compound lever cutting action, smoothly slices through 1¾" to 2" branches.

Nos. 525, 530
The famous "Tiffany" pattern lopping shears 25" and 30" models. Cut branches up to 1¾".

PRUNING SAWS



No. 1826
26" blade of Sandvik Swedish steel especially designed for tree work. For those spots where a chain saw can't operate.

Send for literature and additional information on pruning tools of all types.

SEYMOUR SMITH & SON, INC.
Oakville, Connecticut, U. S. A.

Quality Tools
SEYMOUR SMITH
Since 1850

Sales Representative
JOHN H. GRAHAM & CO. INC.
105 Duane Street, New York 8, New York

"The Little Company"

(Continued from page 55)

1,426,000 common battery telephones in service in Independent exchanges. That is some way from the total industry mechanization that lures us; but as a percentage of the total number of Independent stations, it represents a great advance in the postwar period.

In 1945, at the end of World War II, 44 percent of Independent telephones were common battery and 21 percent were magneto. In 1959, there were 13 percent common battery and 3 percent magneto. That is, in 14 years we jumped from 35 percent dial operation to 84 percent; and we have nearly eliminated the old magnetos. If the rate of progress of the past five years is maintained, the last magneto telephone will be taken out in 1962; and by 1965 the C. B. instruments will have followed them and we shall have reached the goal of 100 percent dial automatic switching.

However, it may not go quite that way. We may expect a "last ditch minority" that will hang on to its past for some time after that. So many times we have heard the familiar refrain: "Our customers are conservative farmers. They are well satisfied with the service we give them. They would fight any attempt to force higher rates on them for automatic service."

Pressures of Modernization

LET US admit that good manual service is satisfactory in a rural community — **and far cheaper. Nev**ertheless these companies are in the same category with the die-hards who fought to retain horse-drawn traffic at the turn of the century. The pressures of modernization will force them to conform.

What pressures? First of all there is D.D.D. Direct Distance Dialing may have its demerits, but it is as inevitable as lies at an election. Subscribers in rural areas may be well pleased with manual service at low rates — and certainly there are good arguments in favor of it — but the nation-wide move to D.D.D. will not let them alone. For better or worse, the over-all mechanization of telephone service will not tolerate for long any rustic fringe of manual operation.

There is the trend of urbanization. Even today, few remote areas are exclusively rural as they were a few years ago. Everywhere the big cities are spilling over into the green grass. The 1960 census has banished the dream of any rural American community that may have longed to remain forever sylvan and unspoiled. California is a typical example. In the census decade, the state gained nearly 50 percent; but San Francisco lost 60,000 residents. New York, Detroit, Minneapolis and dozens of other big cities share the same experience. Cities along highways are linking up in 'multiple dumbbells," continuous chains of metropolitan development filling the interurban farm areas with city people who demand city service.

"Project explosions" continue and expand. Thanks to urban taxes, the fear of atomic war effects, difficulties with unions, employe housing and parking problems and other factors, there is a continuing surge of big factories, military projects, defense production plants and so forth, pouring out into the hinterlands. No desert, no mountain side, no wheat farming area, however remote from a city, is safe from such an invasion.

Almost overnight, any small rural telephone company may have to meet the demands of hundreds, perhaps thousands, of city people with city industries and city ideas, people who want modern business and residence telephone service at once, not in some remote and leisurely-achieved future. The small company must serve them or give place to those who will.

Nothing in this means or implies that the small company is inherently unable to meet the challenge and expand to the requirements of this hectic period. Many of them are ably and vigorously managed; for them the mechanized future holds no peril but rather the promise of ever bigger

and more profitable operation. Almost invariably one finds that these progressive small companies are active in association work.

The Numerical Shrinkage

AS EVERY telephone man knows, there is a continuous numerical shrinkage of companies, to meet a continuing increase in service. At the end of 1943, Independents served 5,068,000 telephones with 6,200 companies. At the end of 1959, we served 10,785,000 telephones with 3,560 companies. That is, after 16 years Independents operate more than twice as many 'phones with 43 percent fewer companies.

This shrinkage of operating units may be bad or good, indicative of weakness or strength, according to circumstances. In many cases, small but strong and well-managed companies have merged purposefully to gain greater efficiency and more profitable operation. That is desirable and may be expected to continue.

In many other cases, operators of small, weak companies, in hopelessly unprofitable areas, technically and financially unqualified to meet their changing obligations, have been absorbed or superseded, as they should have been, by others better able to serve the public.

There remains an important stratum of small companies in doubtful conditions, who can survive, who can flourish and expand — if they will. If they can muster those qualities of courage and determination referred to by Mr. Naylor, they can continue to operate and grow, small but efficient and profitable, and as free as any utility business can hope to be in this highly regulated age.

How many are in this particular category? That is hard to answer. Statistics of the smaller Independent telephone companies are scarce, not notably reliable and often hazy for lack of precise definitions. To search for indicative and revealing Independent telephone data is like hunting for 4-leaf clover in a nudist colony; one loses sight of one's primary objective in the distraction of unexpected discoveries.

There are some 2,520 companies in

Leading Telephone Manufacturers Select

VECO VARISTORS

Reliability, ruggedness and accuracy are of the utmost importance in telephone performance—and engineers recognize these characteristics in **Veco Varistors.** Wherever a voltage-sensitive variable resistor can be used, VECO Varistors will fill the bill . . . they're engineered to do the toughest jobs with complete efficiency. Most companies specify **VECO varistors and thermistors,** a further indication of the high regard VECO has earned in the field of thermal and electrical measurement and control.

Other VECO products:
Thermistors • Chopperettes • Combustion Analyzers • Thermistor Catheters and Needles • Matched Thermistors • Thermal Conductivity Cells • Thermistor Kits • Varistor Kits • Hypsometers • LOX Thermistors — and many others.

Our quality control processes are accepted under MIL-Q-5923 standards

Free:
Write for Thermistor-Varistor Catalog SB 52 for additional information on VECO Thermistors, Varistors and other products. Cataloged in EEM and Radio Master.

VECO VICTORY ENGINEERING CORPORATION

600 Springfield Road, Union, N. J. MUrdock 8-7150

ASSOCIATION OF COMMUNICATION ENGINEERS
ANNOUNCEMENT

The Association of Communication Engineers announces the availability of services of its membership firms as follows:

Robert Welty, Box 282, The Dalles, Oregon
J. A. Fussell, Jr., Box 1531, Harve, Mont.
Associated Engineers, 1239 Lewis Avenue, Billings, Montana
Communication Consultants, 1114½ Main Avenue, Fargo, N. D.
Carl C. Crane, Inc. Cantwell Building, P. O. Box 229, Madison 1, Wisconsin
Gault, Moore & Stevens, Gardner, Kansas
Flahart & Dittman, First Nat'l Bank Bldg., Rapid City, S. D.
Davis & Razak, Box 897, Dodge City, Kans.
H. S. Nixon Engineering Co., 305 W.O.W. Bldg., Omaha, Neb.
Polumbus Engineering Co., 2400 North Main, Hutchison, Kansas
Reed, Wurdeman & Associates, 1370 31st Ave., Columbus, Neb.
Richardson Electrical Engineering Co., Box 263, Solomon, Kansas
Philip L. Burns, 630 Davenport Bank Bldg., Davenport, Iowa
Finley Engineering Co., Box 352, Lamar, Missouri
Mid-Continent Engineering Co., 222 W. Walnut St., Springfield, Missouri
Sloan, Cook & Lowe, Room 1344, 120 S. LaSalle St., Chicago, Illinois
Hicks & Ragland, Box 3008, Lubbock, Tex.
F. M. Hollondsworth, 125 W. S. Commerce St., Wills Point, Texas
Jack K. Covington, 266½ Cypress Street, Abilene 2, Texas
Joe E. Ward, Box 3157, Wichita Falls, Texas
F. E. Woodruff, 316 Bailey Ave., Fort Worth 7, Texas
Ladd Engineering Co., Box 29, Ft. Payne, Alabama
Engineering Associates, Inc., Box 151, Macon, Georgia
L. E. Wooten & Co., Box 2984, Raleigh, North Carolina
Cottrell & House, Inc., Box 6007, Nashville 12, Tennessee
McCall-Thomas Engineering Co., Box 727, Orangeburg, S. C.
Design Service Company of New York, Inc., 76 Ninth Avenue, New York, N. Y.
H. E. Bovay Jr., 5217 Government Street, Baton Rouge 6, Louisiana
DeWild-Grant-Reckert & Stevens, Rock Rapids, Iowa
Dale D. Jacobson, Inc., Hector, Minn.
J. B. McCrary Engrg. Corp., 1400 Atlanta Federal Savings Bldg., Atlanta 3, Ga.
K. P. Kenworthy & Assoc., P. O. Box 573, Bellevue, Wash.

The above firms respectively offer their services for the design, preparation of plans and specifications, supervision of construction, preparation of reports and other services on telephone and communication facilities.

ASSOCIATION OF COMMUNICATION ENGINEERS
P. O. Box 105 Gardner, Texas

the 1,000 stations-or-fewer bracket. Let us tearfully admit that the 816 of them who have fewer than 150 stations are probably too small for their health and must eventually sell out or merge whether they like it or not. (Many of them may hotly resent that! Good luck to them. They will be welcome exceptions if they make it stick.)

That leaves about 1,700 little Independents operating anything from 150 to 1,000 stations. Let us assume that they can endure, that they need not be absorbed by a large corporation, that they can continue as Independent operating units even in this harrowing period of automation complexities and bigness — *if they are given the assistance they must have.* That is the essential "if."

Actually, the help that the little operator needs is right before him, his for the asking. There cannot be many businesses where more is done by the big men to keep the little men in profitable operation. Our 39 state associations are dedicated to the task. Most of the money a state association receives comes from big companies who really have no particular need for such an association; and most of what they pay out works for the benefit of the little companies. From the major state associations with full-time professional staffs, to the smallest, whose work is done by an unpaid secretary helped by volunteers, the motif remains the same: Help the little fellow.

Throughout the industry there is a feeling that what is good for the little man is good for all, and that when the little man goes under everyone loses something. It is perhaps a commercial application of what John Donne had in mind 350 years ago when he wrote: "Never send to know for whom the bell tolls; it tolls for thee."

One of the reasons why all should work to keep the little man afloat in the utility sea has been voiced many times. It will bear re-statement, for we tend to forget it. It is fundamental to our Independents' independence: If the attrition of small companies continues to the point where there are left only a baker's dozen of big ones, then will come socialistic government ownership of telephones.

Despite all our mouthing about democracy and free enterprise, the stark fact remains that we are steadily being forced into state socialism. The principal reason that our telephone industry is not a part of the government machine, as in other great countries, is the continued existence of hundreds of little companies.

Even in this country, where the socialists still have to work under the mask of democracy, a huge corporation could be destroyed or absorbed with ease. The swing to labor union socialism that hamstrung Great Britain in 1945 could happen here; the techniques of inciting the *Have Nots* against the *Haves* are simple and well established. But if an attempt were made to dispossess hundreds of little "personal" companies, known and liked in their little communities, the Marxian claptrap would not work so well.

The Socialists know that. They must wait until the little ones have been digested by the big ones — or until the United States has become one big urban-minded community and the local interests are lost in the Greater Centralization. Meanwhile, it is plain self-interest for big companies to help the numerous little Independents to stay numerous and Independent, also efficient and profitable. For their own good health, they are their brothers' keepers.

The best medium for that help is the state telephone association; and the best recruiting ground is the annual convention. The problem is, why do so many small companies stay out and away, when they are cordially beckoned in? Why do they ignore the helping hand?

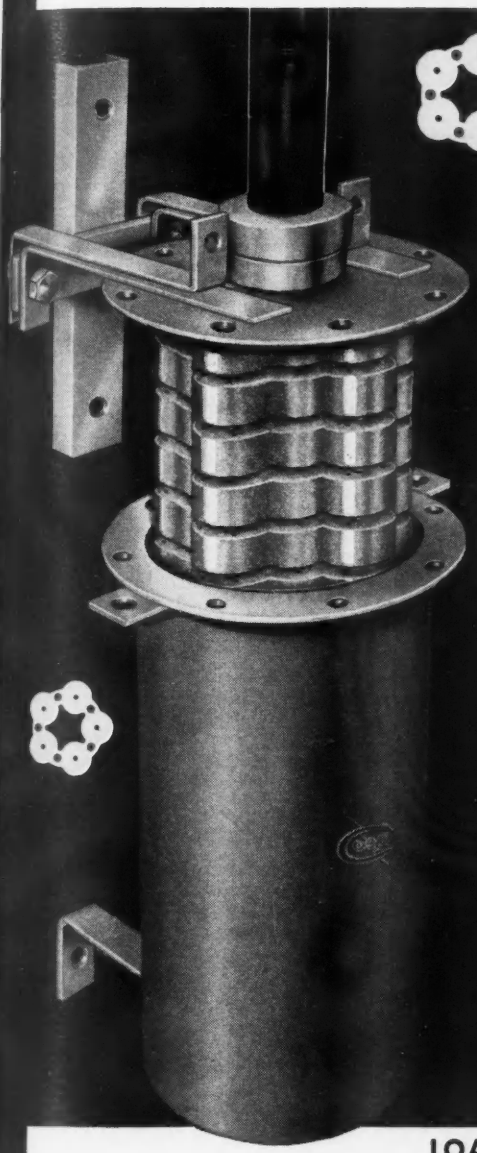
Possibly the associations' salesmanship is at fault. Possibly our conventions are too imposing, too well designed to "talk big to the big." Perhaps more convention events should cater specifically to the small man and make him proud of his importance rather than conscious of his smallness.

It would be folly indeed to attempt here to offer plans or formulae. Every association's problems and circum-

Something New!

AT THE 1960 U.S.I.T.A CONVENTION

Conrad Hilton, Room 539A



THE COOK EXPANDABLE COIL CASE with 88 mh or 44 mh LOADING COILS

LOADING COIL ELECTRICAL PROPERTIES

Type of Coil	Nominal Inductance (MH)	CHARACTERISTICS						
		Inductance Unbalance (%) Maximum	D.C. Resistance (Ohms) Maximum	D.C. Resistance Unbalance (Ohms) Maximum	Effective Resistance (Ohms) Maximum	Dielectric Strength Between Winding (D.C. Volts) Minimum	Insulation Resistance (Megohms) Minimum	Cross Talk Loss Between Adjacent Coils (Decibles)
613-344	44	.5	5.4	.2	7.1	10,000	10,000	90 or Greater
614-343	88	.5	9.0	.2	11.0	10,000	10,000	90 or Greater

COOK ELECTRIC Company

Since 1897

2700 SOUTHPORT AVENUE CHICAGO 14, ILLINOIS

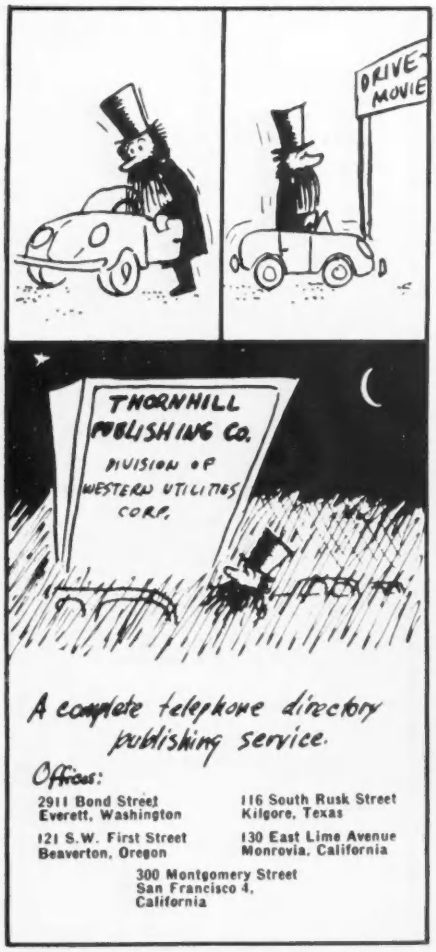
see them at the convention

STERLING EARTH-BORING MACHINES

ROOM 613-A

WYOMING VALLEY EQUIPMENT DIV.
714 WYOMING AVENUE
KINGSTON, PA.

THRU-OUT THE WORLD
STERLING DIGGERS



stances are different. They vary from state to state to an extraordinary degree; and no one knows half as well as the association officers what those circumstances may be. But one may at least offer this suggestion:

In a state where there are small companies, the first and most important objective of the Independent telephone association should be to ensure that every company is an active, interested and participating member; to induce every small company to keep abreast of the changing techniques of the industry; and to offer energetically every possible aid in that direction.

That involves some expensive salesmanship. It may in fact be very much a "hard sales" objective. So be it; it will be worth what it costs.

In this industry we cannot afford to tolerate "slums" of poor, underrewarded, inefficient companies. The only healthy way to eliminate them lies not in their extinction or absorption by bigger units, but in their renaissance. — *L. A. Gritten.*

R. W. Hedrick Dies

ROBERT W. HEDRICK, 78, of Jefferson City, Mo., secretary-treasurer of the Missouri Telephone Association for 36 years, died September 12. He was a former state legislator and was prominent in Masonic activities throughout Missouri.

Mr. Hedrick was born in Ottumwa, Iowa, Jan. 22, 1882, the son of Joseph Wesley and Janet Mills Hedrick.

He was a practicing attorney, having gained admission to the bar through home study and extension courses.

Mr. Hedrick went to Jefferson City about 1920 as a member of the Legislature and served two terms in the House of Representatives from Benton County. He went into the Secretary of State's office in 1923 as head of the corporations division.

He was appointed secretary of the Missouri Telephone Association on May 1, 1922, and served in that capacity until May, 1958, when he was appointed general counsel of the Association. He served the association in this capacity until May 1, 1960.

R. W. HEDRICK

For the past 10 years, he and his son, Robert W. Hedrick Jr., the present secretary-treasurer of the Missouri Telephone Association, had been associated in private law practice.

Mr. Hedrick was a charter member of the Theodore Gary Chapter of the Independent Telephone Pioneer Association, which was organized on Mr. Hedrick's birthday, January 22, 1946, a member of Jefferson Lodge No. 43 A. F. and A.M.; Jefferson City Chapter No. 34, Royal Arch Masons and was past high priest of the chapter; a member and past Illustrious Master of Ezra Council No. 32, Royal and Select Masters; a member and past commander of commandery, Prince of Peace Commandery, No. 29, Knights Templar; Order of High Priesthood of Missouri; Order of Silver Trowel of Missouri; past president of Past Commanders Association of Missouri; Grand Commander of Grand commandery, Knights Templar of Missouri; Grand Illustrious Master of Grand Council of Royal and Select Masters; member of Red Cross of Constantine; Scottish Rite Mason and a Shriner.

He was a member of the Presbyterian Church.

In addition to his son, he is survived by his widow, the former Miss Emily Tietjen of the home, and one daughter, Mrs. F. M. Pollard, of Ottumwa, Iowa.

C. F. Fiore Named To BDSA Mobilization Post

CAESAR FRANK FIORE, assistant to the vice president and director of marketing and commercial development of International Telephone & Telegraph Corp., New York City, has been named assistant director for Mobilization Planning, Communications Industries Division, Business & Defense Services Administration, U. S. Department of Commerce.

Fiore comes to BDSA from the International Telephone & Telegraph Corp. under an arrangement by which industry makes the services of key executives available for temporary assignment — usually six months — without compensation from the government. The service also will equip him for membership in the National Defense Executive Reserve, which would staff the operation of a pro-

Participants in BDSA ceremony are MELBA CREELMAN and GLORIA K. THOMAS of the Communications Industries Division; SANDY FIORE; ALFRED DI SCIPIO, vice president, ITT, Marketing Division; MRS. FIORE; WILLIAM A. WHITE, SR., administrator, BDSA; CAESAR F. FIORE, assistant director for mobilization planning Communications Industries Division; A. J. FALK, Director, Communications Industries Division; G. P. GWALTNEY, Communications Industries Division; and GEORGE STRICHMAN, president, ITT Kellogg.

The Most Wanted Line...
EXCITING TO SEE, EASY TO HAVE AND TO USE . . . THE GLADWIN LINE, OF COURSE! OUR LINE OF FINE PRODUCTS FOR THE TELEPHONE INDUSTRY ARE IN DEMAND ALL OVER THE WORLD, BECAUSE THEY ARE REVENUE-DESIGNED! WATCH FOR THE GLADWIN PLASTICS TRADEMARK ON SIGNS, DISPLAYS, TELEPHONE MOUNTINGS, AND MANY OTHER ITEMS PLANNED WITH YOU IN MIND!
GLADWIN PLASTICS, INC.
165 COURTLAND ST., N. E.
ATLANTA 3, GEORGIA • JA 5-5384
G
P

TELEPHONE ENGINEER & MANAGEMEN

1961 Telephone Industry F

This Forecast Edition will be another "First" for TE&M and the Telephone Industry. TE&M's writers and research department will look at 1960 in terms of growth, earnings, technological advances, significant trends in legislation, regulation, labor, operating costs, financing, etc. and

Will FORECAST for 1961 . . .

Advertising Reservations now being accepted

A Valuable Reference Book For Telephone Operating Men and Manufacturers of Telephone Equipment and Supplies

Here's just a sampling of exclusive features which will be included — "Comparative Statistics between the Bell System & Independent Segments on Over-All Growth — Station, Plant Investment, Revenues and Earnings" "1961 and The New Look in Telephone Plant" "New Measurements for Traffic in 1961" "Washington and the Telephone Industry '61" — just to mention a few.

Tables—Charts—Statistics

TE&M's exclusive "Telephone Industry Forecast" will also present tables, charts, statistics and articles that will tell where the industry has been, where it is today, and where it is going. It is being designed to be an invaluable reference book for both Telephone operating people and the suppliers of telephone equipment and supplies.

EMnounces another important "FIRST"

FORECAST EDITION... JAN. 15, 1961

Outstanding Editorial Staff

e FORECAST EDITION is being planned and com-ed by the following outstanding writers of the telephone dustry . . . all of them regulars on Telephone Engineer Management's editorial staff.

hn G. Reynolds ..... Editor
Veteran Author & Telephone Trade Publication Editor

hn S. Reed ..... Technical Editor
Engineer, Lincoln Telephone & Telegraph Co., Lincoln, Nebraska

an R. Stacey ..... Commercial Dept. Editor
General Mgr., Sunland-Tujunga Telephone Co., Sunland, California

A. Perigo ..... Traffic Dept. Editor
General Traffic Supt., West Coast Tel. Co., Everett, Wash.

M. Jones ..... Accounting Dept. Editor
Accounting & Financial Admin., Michigan State University

and Davies & Fred Henck ..... Washington Editors
Editors of "Telecommunications Reports," Washington, D. C.

Corman ..... Small Company Editor
Manager, Southland Telephone Co., Atmore, Alabama

G. Sands ..... Electronics Notebook
Communications Consultant & Author

D. Ehinger ..... Sub-Harmonics & Overtones
President, Citizens Telephone Co., Decatur, Indiana

lie A. Gritten ..... Industry Observations
Prominent in telephone affairs for over 57 years.

U. S. I. T.A. Convention Report

re's an Issue actually written, edited and put to press ring the Convention. In fact, it's so timely it's in the ils to our 13,845 readers 3 days after the Convention ds. It's a complete word and picture story of USITA's rd annual convention.

Order Extra Copies NOW!

Demands for this unusual issue will be heavy. If you will wish extra copies they should be ordered now. Let us know on the Order Form below the number to save for you at the regular rate of 50¢ per copy.

YOUR OWN INDIVIDUAL COPY

If you depend on a copy being routed to you by someone else in your office you might be disappointed. Why not order your own individual copy sent to your home or office on the 1st and 15th of every month (24 big issues each year) for only $4.00. Use the Order Form below.

ORDER FORM

Telephone Engineer & Management
7720 Sheridan Road
Chicago 26, Illinois 1960

EXTRA COPIES ORDER

Please reserve and send ..... copies of The Telephone Industry FORECAST Edition of Telephone Engineer & Management, Jan. 15, 1961 issue, at the regular rate of 50¢ each.

SUBSCRIPTION ORDER FORM

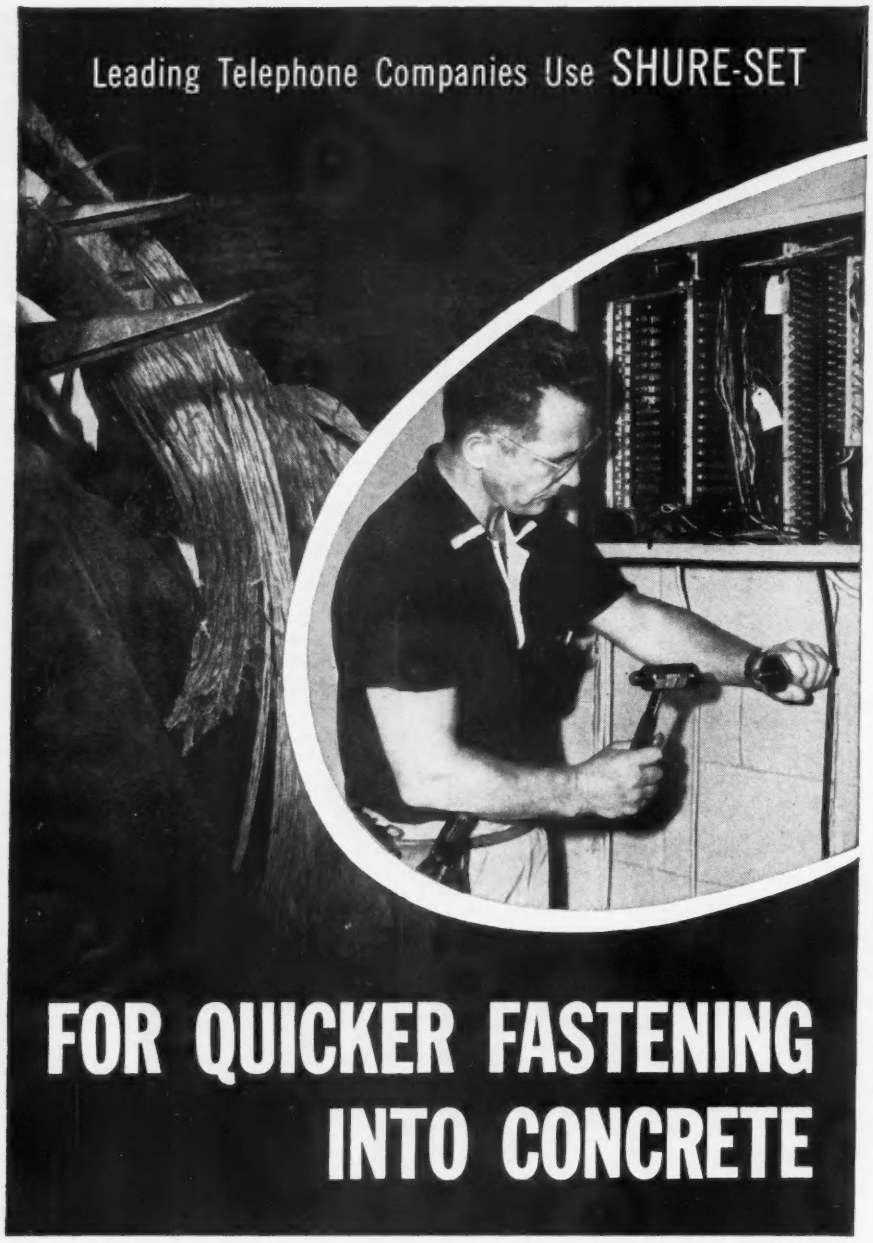
Please enter my subscription to Telephone Engineer & Management for one year, 24 issues, at $4 per year.

.....Enclosed find check. .....Bill me.

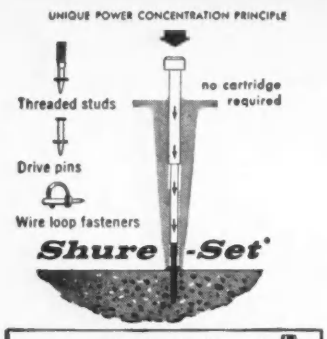
Name ..... **Title** .....

Company .....

Mailing address .....



FOR QUICKER FASTENING INTO CONCRETE



NO REBOUND
NEW SHURE-DRIVE® HAMMER
with Floating-Action
Newly-patented hammer actually absorbs shock, increases power and reduces worker fatigue. Ask for model R-400.

To cut installation time and increase worker effectiveness, a special Shure-Set fastening tool is available for the telephone industry. This hammer-in tool sets austempered fasteners into concrete without pre-drilling or plugging . . . it also converts in seconds to an efficient drill holder for "twist and turn" work.

Shure-Set tools, threaded studs, drive pins and wire loop fasteners have been thoroughly tested and proved in the laboratory and on-the-job! Now Shure-Set has been adopted by many companies as the new standard for light fastening. Write for facts today on how Shure-Set can save you time and money!

other products by

Ramset® Fastening System

OLIN MATHIESON Chemical Corporation

WINCHESTER-WESTERN DIVISION
303-J Winchester Ave. - New Haven 4, Conn.

duction agency in the event of a national emergency.

Fiore, 49, joined his present employer in 1956 and has had a broad industry experience in sales, marketing, pricing, budgets, and training of personnel. He has served as manager of administration, as deputy regional executive for Latin America and the Far East, and as regional administrator for Latin America.

A graduate of the United States Military Academy, Fiore has served in the U. S. Cavalry, Armor, and Signal Corps. As a Colonel during World War II, he commanded the Reconnaissance Battalion of the 9th Armored Division in Europe. His other military experience includes directorship for three years of the Communication Department, the Armored School, Fort Knox, Ky.

Fiore is president of the West Point Society of New York, a director and member of the Investment Committee of the U. S.-Spain Chamber of Commerce, a member of the Japan Society, the Institute of Radio Engineers, Armed Forces Communications and Electronics Association, Spanish Institute and Pan American Society.

Wesley M. Angle Dies

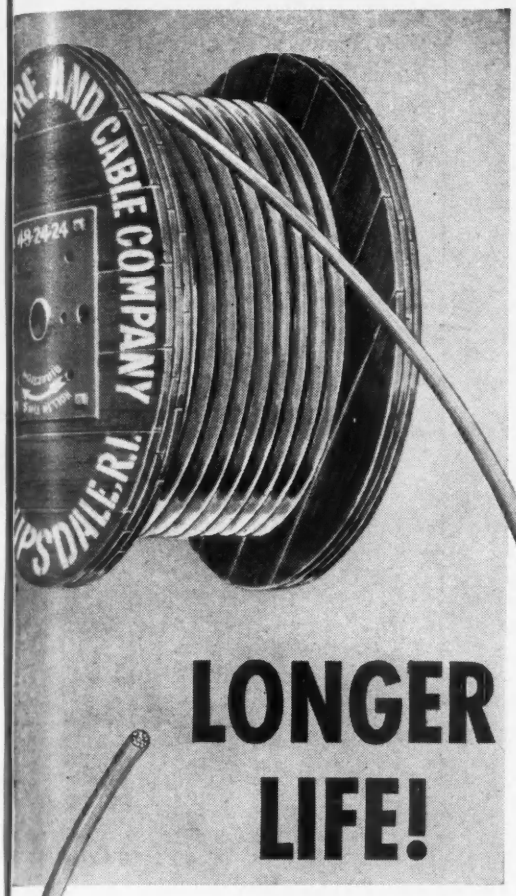
WESLEY M. Angle, president of Stromberg-Carlson Co. from 1934 to 1945, died unexpectedly at his summer home in Kennebunk, Maine, last month. He was 77.

Starting as a cable machine operator in 1903, Mr. Angle blazed a trail to the presidency with markers of experience in many phases of Stromberg's operation.

He was a stock clerk assembler, cost clerk, office manager's assistant, assistant treasurer and then office manager. He was named secretary and a director in 1914, vice president 10 years later, and president in 1934.

Mr. Angle was Stromberg board chairman from 1945 to 1949, then honorary chairman. When Stromberg was merged into General Dynamics Corp. in 1955, Mr. Angle served as a director of the parent company for a few years.

To Mr. Angle, the most important aspect of his job was his relations



LONGER LIFE!

When you talk about Kennecott lead-alloy sheathed cable, longer life REALLY MEANS SOMETHING! It means retention of full electrical properties over the *entire* long, long life of the cable. That's because every component that goes into Kennecott Telephone Cable—from copper conductor to superior, uniformly strong "Young Process" lead sheath—is checked and tested. Flaws, imperfections and inferior materials are ruthlessly eliminated.

IT'S KENNECOTT TELEPHONE CABLE

INDEPENDENT

THE OKONITE COMPANY

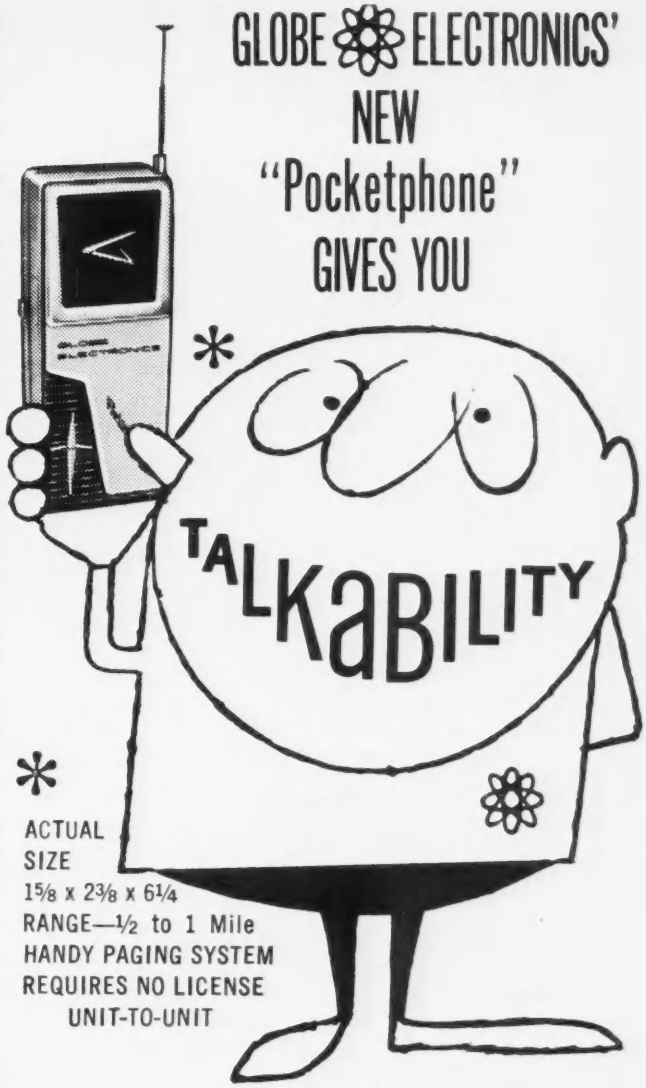
KENNECOTT WIRE & CABLE DIV.

SALES OFFICES:

Atlanta 8, Ga.
Baton Rouge, La.
Birmingham 5, Ala.
Bluefield, Va.
Boston 10, Mass.
Chicago 29, Ill.
Cincinnati 6, Ohio
Cleveland 3, Ohio
Dallas 1, Texas
Denver 16, Colorado*
Detroit 20, Mich.
Houston 6, Texas
Indianapolis 21, Ind.*
Kansas City 8, Mo.
Los Angeles 13, Calif.
Memphis, Tenn.
Minneapolis 3, Minn.*
Milwaukee 6, Wisc.
Mobile, Ala.
New Orleans 12, La.
New York 17, N. Y.
Philadelphia 40, Pa.
Phillipsdale, R. I.
Pittsburgh 33, Pa.
Portland 5, Oregon
Roanoke 15, Va.
St. Louis 10, Missouri
Salt Lake City 15, Utah
San Francisco 24, Calif.
Seattle 1, Washington
Syracuse 3, New York
Tulsa, Oklahoma
Waterbury 20, Conn.*
Wilkes-Barre, Pa.

*c/o Chase Copper & Brass Co.

GLOBE ELECTRONICS' NEW "Pocketphone" GIVES YOU



ACTUAL SIZE
1⅝ x 2⅜ x 6¼
RANGE—½ to 1 Mile
HANDY PAGING SYSTEM
REQUIRES NO LICENSE
UNIT-TO-UNIT

New portable high styled two-way radio that actually fits into your pocket. Exclusive "power-pak" rechargeable battery lasts a year or more. For factory, surveying, construction, department stores, stock-yards, hospitals, firemen, policemen, golf, office, and home. Price: $125.00 each.

Can also be used with Globe Electronics' CB100 or CB200 two-way citizens band radios, for longer ranges.

GLOBE ELECTRONICS A Division of Textron Electronics, Inc.
Council Bluffs, Iowa

TEM-2

PLEASE SEND ME COMPLETE INFORMATION ON GLOBE ELECTRONICS':

☐ POCKETPHONE ☐ CB-100 ☐ CB-200

Name _____

Address _____

City & State _____

Spiraflex® CORD

BY GENERAL INSULATED WIRE WORKS, INC.*

*Licensed to manufacture under existing patents

Telephone cord sets of proved performance backed by General Insulated's unmatched **experience** and know-how in the manufacture of quality telephone tinsel cordage:

Spiraflex **HANDSET CORDS** in bright colors with non-staining thermoplastic jackets in **solid** color extrusions matching color shade and sheen of telephone sets. Also non-staining **black** Neoprene jacketed cords. Both types available with or without integral moldings and **terminations**. Furnished in standard or extra long lengths.

STRAIGHT HANDSET AND DESK SET CORDS are available in non-staining thermoplastic **constructions** in matching colors and in black Neoprene.

GENERAL INSULATED WIRE WORKS, INC.

A DIVISION OF GENERAL CABLE CORPORATION
Providence 5, Rhode Island

CONDEX* MULTIPLE CONCRETE CONDUIT

Special fittings — miters — —short lengths — expanded web sections available, also adapters to claytile, transite and fiber duct.

SPOTTING OF CONDUIT ALONG RIGHT-OF-WAY ADJACENT TO PROPOSED TRENCH

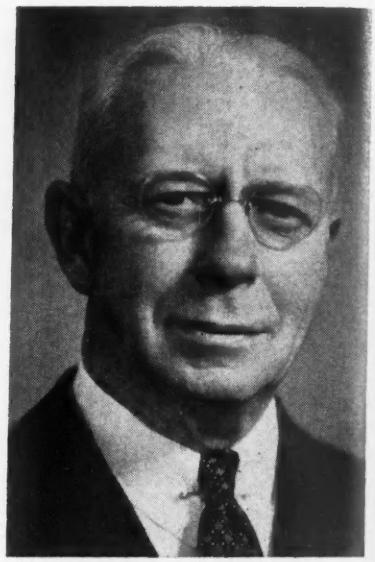
American Concrete Pipe Co., Sub. of Am. Pipe and Construction Co., 2025 S. 7th St., Phoenix, Ariz. Tel: AL 2-7566
American Pipe and Construction Co., 4635 Firestone Blvd., Southgate, Calif. Tel: LOrain 4-2511
American Pipe and Construction Co., 101 Alquire Rd., Hayward, Calif. Tel: JEfferson 7-2072
American Pipe and Construction Co., 518 N.E. Columbia Blvd., Portland, Ore. Tel: BUtler 5-2531
Concrete Conduit Corp., 130-01 Northern Blvd., Corona, N. Y. Tel: ILLinois 7-1515
Chicago Pre-Cast Products Corp., 29W629 North Aurora Rd., Naperville, Ill. Tel: ELmwood 5-2700—2701
Denver Concrete Products Co., 5020 Marshal, Arvada, Colorado. Tel: HA 2-4202
Eastern Pre-Cast Corporation, 675 Main St., Tullytown, Pa. Tel: Windsor 9-3750
Elmore Concrete Products Co., Division of North Star Concrete Co., Elmore, Minn. Tel: ELmore 52
J. E. Evans Concrete Products Inc., Cleveland, Ohio. Home Office: Indianapolis, Ind. Tel: WAlnut 5-5301
J. E. Evans Concrete Products Inc., Shelbyville, Ind. Tel: WAlnut 5-5301
Neff Concrete Products Co., 711 Section St., Danville, Ill. Tel: Danville 1016
PRE-CON Limited, Orenda Rd., Brampton, Ontario, Canada. Tel: HUdson 1-3492 (Toronto)
Pre-Con of Quebec, Ltd., Montreal, Quebec, Canada. Home Office: Brampton, Ont. Tel: HUdson 1-3942 (Toronto)
T.E.L. Pre-Cast Products Corp., 1 Industrial Ave., Edgewater, Florida. Tel: GArden 8-9881
Utah Concrete Pipe Co., 379—17th St., Ogden, Utah. Tel: EXport 9-1171
For information regarding CONDEX* Multiple-Duct Concrete Conduit, call or write your local producer, or the parent company.

*Registered Trademark

CONDEX **GAGNE ENTERPRISES, INC.**
29W 629 NORTH AURORA ROAD
NAPERVILLE, ILLINOIS
NAPERVILLE 2700-2701

with employes. He knew almost every Stromberg worker by his first name. Many employes came to him with their problems and he invariably gave his time and attention to help them.

Keenly interested in outdoor activities, Mr. Angle took nine canoe trips into the Canadian wilderness



WESLEY M. ANGLE

with his family. On a business trip in 1938, he walked 70 miles over New Zealand trails in four days.

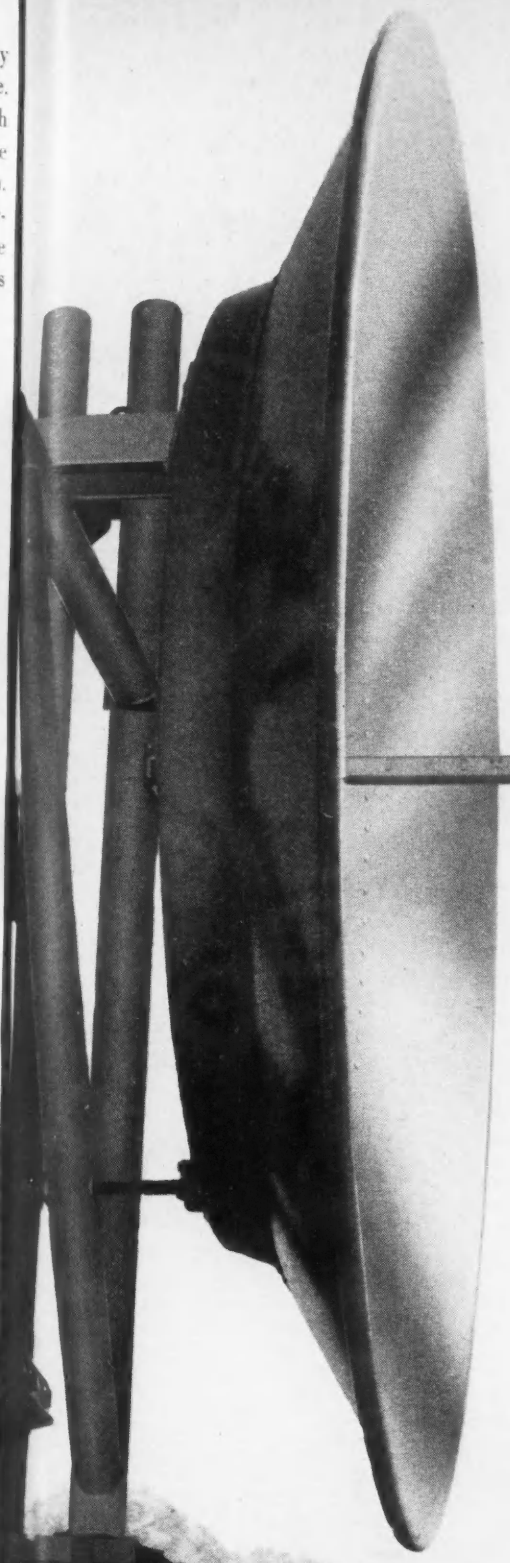
He had spent summers in Maine for many years. He was an active golfer and bowler.

Mr. Angle participated widely in civic affairs, helping guide the many business groups and institutions of which he was a member. He was president of the Chamber of Commerce in 1931 and had been a trustee since. He was a director of the National Assn. of Manufacturers three years and headed several NAM committees.

He also was a director of Associated Industries of New York State and chairman of its committee on education. He was president of Genesee Hospital three years, then a hospital governor. Mr. Angle had been a director of Security Trust Co. about 30 years.

For several years, Mr. Angle headed the board of trustees of Brick Presbyterian Church and always had been active in the church. His father, the late Charles E. Angle, had been a Brick Church trustee.

Mr. Angle was vice president of the Rochester Humane Society from



SERVING THE TELEPHONE INDUSTRY WITH THE FINEST IN MICROWAVE ANTENNAS

Gabriel antennas link millions of channel miles, coast-to-coast

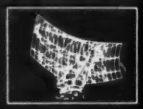
With today's greatly increased volume of commercial and military traffic, modern communications are relying more and more on microwave data links to handle peak loads faster, and at lower cost.

Gabriel pioneered early in the design and development of antenna systems for microwave links. Today, Gabriel applies that experience to the manufacture of a *complete* line of broad-band, point-to-point "Hop-Stretcher" antennas covering all frequency ranges for TV, radio and common carrier communications. Gains for various links are supplied by reflectors ranging in diameter from 2 to 15 feet. New design techniques result in antenna efficiency of 65% and VSWR as low as 1.10 to 1 over any 300 mc band between 4000 and 13,000 mc.

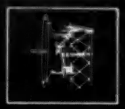
Write for complete specifications on Gabriel's Standard and Ruggedized "Hop-Stretcher" lines.

PIONEERS IN ANTRONICS

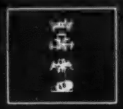
Gabriel electronics DIVISION OF THE GABRIEL CO., MILLIS, MASS.

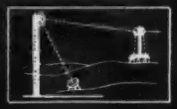

AIRPORT SURVEILLANCE RADAR ANTENNAS

ROTARY JOINTS


POINT-TO-POINT COMMUNICATION ANTENNAS

FEEDS AND HORNS


DRONE & DRONE CONTROL ANTENNAS


RESEARCH & DEVELOPMENT

ALPHADUCT

ALPHADUCT DROP WIRES
18 AWG COPPERWELD
CONDUCTORS:

PARALLEL

TWISTED PAIR

PARALLEL REINFORCED

DUMBELL

ALPHADUCT
TELEPHONE WIRE
SPECIFICATION GRADE
ALPHADUCT
WIRE AND CABLE CO.
NEW BRUNSWICK, N.J.
TEL. CHARTER 9-8090
MARKER: BLUE AND ORANGE THREAD UNDER JACKET

LEICH
Subsidiary of
GENERAL TELEPHONE & ELECTRON

FROM LEICH

The only drop wire to give you these 4 important features

When you buy drop wire from Leich, you can be sure of the most for your money. Only Alphaduct from Leich gives you these four big features.

1. Rigid Testing produces longest-lasting drop wire.

Every coil of Alphaduct from Leich is thoroughly tested to make sure it's the longest-lasting drop wire you've ever installed. One example: Even though drop wire doesn't normally have to withstand 1,000 to 2,500 volts, Alphaduct is tested in this range to give you added protection.

2. Dated Drop Wire proves Alphaduct's superiority.

Dated Alphaduct lets you see at a glance how long a drop has been in service. You can prove to yourself how long Alphaduct lasts.

3. Carton Packaging saves time and money.

You can handle Alphaduct quickly and easily because each coil is packaged in a carton. These packages also protect the wire from crushing . . . simplify warehousing and inventory counts.

4. Stocks in 5 Leich Warehouses and Distributing Centers assure fast delivery.

Your nearest Leich warehouse carries Alphaduct in stock, and can take care of your needs promptly.

Call your Leich representative today. He'll make sure you get Alphaduct—the only drop wire with the 4 big features.

CH SALES CORPORATION • 427 WEST RANDOLPH STREET • CHICAGO 6, ILLINOIS
C COAST: 11401 W. PICO BLVD., LOS ANGELES 64, CAL.
WEST: 1227 SLOCUM STREET, DALLAS 7, TEXAS
EAST: 3651 CONNECTICUT AVENUE, YOUNGSTOWN, OHIO
SOUTHEAST: 5126 SOUTH LOIS ST., TAMPA 11, FLORIDA
nufacturers of telephones, switchboards and related apparatus since 1907

Truco
DENVER

UNIVERSAL
TURRET DERRICK

YOU GET the derrick position you *want* when you buy Truco. Here are all the fine features of the famed Truco Turret Derrick now offered in your choice of *three* mounting positions for the job best suited to your truck body. Not only that, Truco offers full 360° rotation of the turret. You spot the load *where* you want it, dig the hole, set the pole with the positive safety and dependability of hydraulic operation.

Unitized Construction
Full 360° Rotation
No Exposed Moving Parts
8,000 Pounds Capacity
Digger Stows Automatically
30 Foot Sheave Height
Adapts to Standard Line Bodies
Optional 1-Man Fiberglass Basket

See your Truco dealer or representative for full details or write for illustrated literature.

TRUCK EQUIPMENT CO.
3963 WALNUT STREET / DENVER 5, COLORADO

(Continued from page 118)

1918 to 1934; a director of the Visiting Nurse Assn. from 1925 to 193[illegible], and the Civic Music Assn. from 193[illegible] to 1945; and a trustee of the City Bureau of Municipal Research for about 20 years.

Born in Rochester, Mr. Angle was graduated magna cum laude from Harvard University in 1903. In World War I, he served as a captain in the Army Quartermaster Corps.

Between semesters at Harvard, Mr. Angle worked in a family business the Mosely & Motley Milling Company. He was president of the business from 1927 to 1937, working at Stromberg at the same time.

His affiliations included the Harvard Club of New York, the American Institute of Electrical Engineers, the Rochester Engineering Society, the American Legion, Memorial Art Gallery and the Rochester Museum Assn.

Mr. Angle leaves his widow, Ann; a daughter, Mrs. Thomas T. Richmond of New Canaan, Conn.; three sons, Richard W., of Marian, Mass., and Charles E. and George M. Angle, both of Rochester; and 14 grandchildren. Funeral services were held in the Brick Presbyterian Church, Rochester. Friends may contribute to Genesee Hospital or Brick Presbyterian Church.

McClain Named Chief Engineer General Telephone Companys of Iowa, Mo., Neb.

DAVID R. McClain has been named chief engineer for General Tel. Companies of Iowa, Missouri and Nebraska. McClain replaces Fred H. Nolke who became assistant director of Page Communications Engineers, Inc.

McClain joined the Pennsylvania Tel. Corporation, predecessor of General Tel. Company of Pennsylvania, in 1949 as a plant engineer. In 1950, he was transferred to General Tel. of Ohio where he served as division engineer, assistant plant engineering supervisor and plant extension engineer. His previous experience includes being associated with Bell Tel. Company of Pennsylvania for a period of ten years.

Hi Folks!

I am Warren Bohnsack of Germantown, N. Y. with an invitation for you to visit our display room at the National Convention for a coffee break, Room 633A.

•

The Bohnsack Equipment Co. has two plants now and is really busy with our rebuilt equipment and supply business thanks to you. Believe it or not we have the latest instruments. Factory reconditioned: Kellogg 500, A.E. 80, St. Carl. 1543 and just about any switchboard or part desired.

•

If you haven't received our new catalog, drop us a card.

BOHNSACK EQUIPMENT COMPANY

GERMANTOWN, N. Y. LEhigh7-6213

FLEXIDUCT

solves over-floor wiring problems

- ECONOMICAL
- EFFECTIVE
- FLEXIBLE
- SAFE
- EASY, NOISELESS INSTALLATION

Only two parts handle all over-the-floor duct work—duct and universal fitting. Duct available in 3 sizes: No. 1 Chase ¼" x ½"; No. 2 Chase ½" x ¾"; No. 3 Chase ¾" x 1". Other tees, ells and risers also available.

UNIVERSAL FITTING
Part No. 345
(Patent Pending)

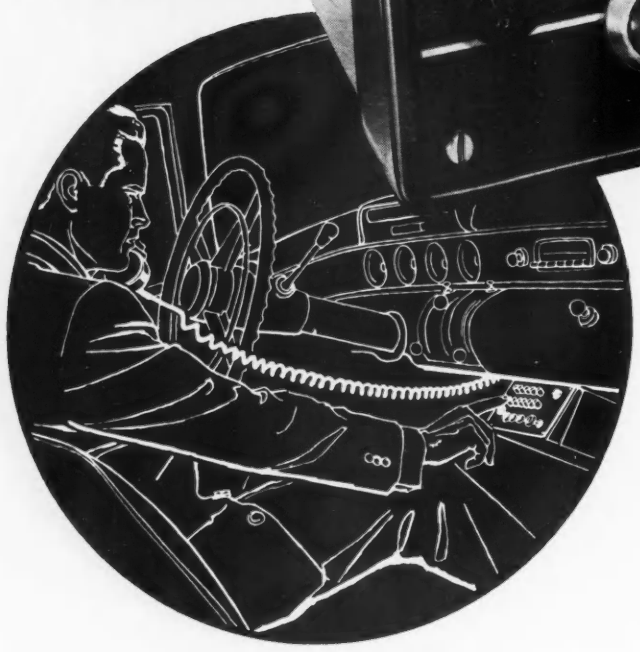
Always Keep Flexiduct on Hand.

Available through:

Buckeye Telephone & Supply Co.
Graybar Electric Co., Inc.
Kellogg Switchboard & Equipment Co.
Leich Sales Corp.
Stromberg-Carlson
Western Electric Co., Inc.
Winders & Geist, Inc.

Write for descriptive leaflet.

WINDERS & GEIST, INC.
2219 North Cotner Blvd.
Lincoln, Nebraska



Motorola Telephone-in-the-car

Fully Automatic

...for unattended service
...added revenue

Now you can provide up to the minute "telephone-in-the-car" service for business and professional men on-the-go! With Motorola Pushbutton Radiotelephone, you can expand your automatic service facilities and add to your profits, simply and easily. Here's how:

At the exchange. The Motorola system is fully automatic in operation . . . connects directly to your switching equipment with no modification for radio required.

In the car. Pushbutton number selection is convenient for the user. And with the fully telephone-engineered Motorola "telephone-in-the-car", he enjoys a service level equal to that provided to your wire line subscribers.

Your Motorola representative will provide full system facts—explain how your company can profit with this expanded service. And he'll give you a complete promotion program to help gain your extra revenue "telephone-in-the-car" subscribers. Call or write today.

Motorola Telephone-In-The-Car Promotion Kit includes a comprehensive program designed to sell the service in your area.

MOTOROLA PUSHBUTTON RADIOTELEPHONE

Motorola Communications & Electronics, Inc., 4501 Augusta Blvd., Chicago 51, Ill., A Subsidiary of Motorola Inc.

It's our pleasure

to shake your hand

...in Chicago
at the
USITA Convention,
October 9 to 12,
ROOM 661

...in your office,
at your convenience.

Call on us—we'll be happy to show how and where Motorola Telephone-In-The-Car, MOTRAC 2-way Radio and Microwave Systems, plus all-new transistorized battery-operated portable test instruments can make money and save money for you.

MOTOROLA

Motorola Communications & Electronics Inc.
4501 Augusta Blvd., Chicago 51, Ill.
A Subsidiary of Motorola Inc.

"Off The Board"

Communications Securities

Markets as of September 12, 1960	DIVIDEND	BID	ASKED	LAST SALE
American Tel. & Tel. Co.	3.30			94½
Anglo-Canadian Tel. Co. (Br. Col.-Dom. Rep.)	1.20	38	40½	
Bell Tel. Co. of Canada	2.20			48¼
British Columbia Tel. Co.	2.20	47	48½	
Calif. Interstate Tel. (Calif., Nev.)	.70	13½	14¾	
Calif. Pac. Util. (Calif., Nev., Ore.)	.90	23	25	
California Water & Tel. Co.	1.36	29¾	31	
Carolina Tel. & Tel. Co.	1.60	39½	—	
Central Elec. & Gas Co.	1.20	27¾	29	
Central Tel. Co. (Minn., Ia., N. C.)	.88	22¾	24¼	
Chenango & Unadilla Tel. (N. Y.)	1.20	26	—	
Cincinnati & Suburban Tel. Co.	4.50	95	98	
Citizens Util. Co. (Calif., Pa.) "A"	stk. only	19¼	20¾	
Citizens Util. Co. (Calif., Pa.) "B"	.48	17¼	18½	
Commonwealth Tel. Co. (Pa.)	1.00	22	23¾	
Florida Tel. Corp.	1.00	25	27	
General Tel. & Electronics Corp.	.76			29
Hawaiian Tel. Co.	1.00	22¼	23¾	
Independent Tel. Co.	none	8⅛	9	
Indiana Tel. Corp.	.50	23½	—	
Inter-County Tel. & Tel. Co. (Fla.)	.72+stk	23½	26	
Inter-Mountain Tel. Co. (Va., Tenn.)	.80	15¾	17	
Jamestown Tel. Corp. (N. Y.)	5.60	88	—	
LaCrosse Tel. Corp.	.80	15½	—	
Lincoln Tel. & Tel. Co. (Nebr.)	2.60	64	—	
Lorain Tel. Co. (Ohio)	1.40	33	—	
Middle States Tel. Co. (Ill.)	.80	23	26	
Mountain States Tel. & Tel. Co. (Ariz., Colo., Mont., Tex.)	.90			26½
New England Tel. & Tel. Co.	1.72			38
North Carolina Tel. Co.	none	1	1½	
Northern Ohio Tel. Co.	2.00	53	58	
Pacific Tel. & Tel. Co.	1.14			28⅝
Peoples Tel. Corp. (Pa.)	4.00	93	—	
Pioneer Tel. Co. (Minn.)	1.00+stk	35	37	
Rochester Tel. Corp. (N. Y.)	1.00			23¼
Southeastern Tel. Co. (Fla.)	1.00	23	24½	
Southern New England Tel. Co.	2.20	46	47½	
Southern Nevada Tel. Co.	1.00	26	28	
Southwestern States Tel. Co. (La., Ark., Okla., Tex.)	1.20	25¾	27¼	
Telephone Serv. Co. of Ohio "A"	*	26	—	
Telephone Serv. Co. of Ohio "B"	*	29	—	
Tidewater Tel. Co. (Va.)	1.40	25	—	
Virginia Tel. & Tel. Co.	1.00	20½	—	
United Utilities, Inc.	1.40	46¼	48	
West Coast Tel. (Wash., Ore., Calif.)	1.28	26¾	28	
Western Union Telegraph Co.	1.40			45⅛
Western Utilities Corp.	.36	8⅛	8⅝	
Western Lt. & Tel. Co., Inc. (Mo., Kans., Ia.)	2.00	44½	47	

* Dividend rate on new stock after split not yet established

(Source of market — DEAN WITTER & CO.)

PENTA POLES

PENTA treated top-to-butt for years of added pole-line service resulting in far less per annum costs. Dependable service by a company who has been serving telephone companies for more than 50 years.

PAGE & HILL, inc.

MINNEAPOLIS 3, MINNESOTA

Hill & Snaith Named To New Positions At Rochester Tel.

JOSEPH A. Hill has been appointed city district traffic superintendent for the Rochester Tel. Corporation. At the same time Frederick W. Snaith was promoted to traffic engineer.

Hill started with the Rochester Tel. Corporation as a shop man in the plant department in 1940, and held several positions in the plant department before becoming a student engineer in 1953. He was named district traffic engineer in 1956.

Snaith was first employed by the telephone company in 1937 as a tracer in the engineering department, and continued in the engineering department until he became an engineer in the traffic department in 1952.

H. A. Carr Joins Norelco

HUGH A. Carr has been appointed assistant manager of the expanding Norelco Telephone Products & Systems Department in the Communications & Electronics Division of North American Philips Company, Inc.

H. A. CARR

In this newly created position, Carr will help direct sales of the new Norelco "E" type voice repeater, the Norelco pushbutton/dial PABX, and the company's central office equipment. He will offer Norelco's wide line of telephone communications equipment to Independent companies and other potential users.

In the announcement from Norel-

HEADBAND PAD

Instantly On — Instantly Off

Pressure of fingers open plastic doors! Snaps shut instantly when slipped over headband wire! Tubular foam pad assures light, soft comfort because (1) pressure of headband is supported by soft foam tubes; (2) air can circulate in and out the furrows; (3) less rubber required in pad! Plastic door reinforces pad and makes neat, streamlined appearance in their dark grey colors. Lg. 3¾" x 2", 70¢. Sm. 2¼" x 2", 35¢.

ART ANSON, INC.

1901 S. 12th St., ALLENTOWN, PA.

Order Your Personal Copies of TE&M Today

If you did not receive your personal copy of each issue of TELEPHONE ENGINEER & MANAGEMENT, why not enter your Personal Subscription sent to your home or office?

1 Year-24 Big Issues-$4.00

TELEPHONE ENGINEER & MANAGEMENT
7720 Sheridan Road
Chicago 26, Illinois

Please send TELEPHONE ENGINEER & MANAGEMENT to me for 1 year.

Name (Please Print)

Title

Company

Street Address or Box Number

City Zone State

LOOK TO THE LEADER...

for
- RELIABILITY
- SERVICE
- NATIONALLY KNOWN TELEPHONE SUPPLIES

Prompt delivery of your order as specified is assured by Lindsay's fast, efficient, personalized service. Lindsay specializes in telephone supplies *only* . . . warehousing a complete line of the finest nationally known brands . . . your guarantee of the best as you want it . . . when you want it.

LOOK TO LINDSAY

THE LINDSAY TELEPHONE SUPPLY CO., *Est. 1939*
Telephone: IMperial 7-7181
360 E. Highland Road, Northfield, Ohio

---

put 'em up and forget 'em

. . . That's what you do with T-C Pressure-treated poles. And you rest assured you have poles to serve for generations. There's a very simple reason why . . . T-C Poles get the best in preservation, the best in chemical preservatives and the best controlled pressure treatment so far developed by modern Technology. Next time specify T-C Pressure-Treated Protection . . . Put 'em up and forget 'em . . . for generations.

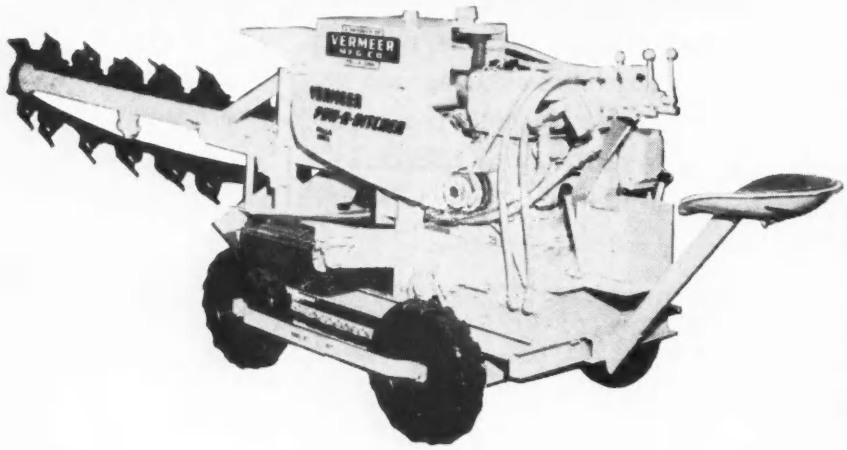
Specify T-C
DISTRIBUTED BY AUTOMATIC ELECTRIC SALES CORP. AND LEICH SALES CORP.

TAYLOR-COLQUITT CO. TIMBER CONSERVATION T-C

TAYLOR - COLQUITT CO.
SPARTANBURG, SOUTH CAROLINA

PLANTS AT SPARTANBURG, SOUTH CAROLINA AND WILMINGTON, NORTH CAROLINA

NOW...THE NEWEST, FASTEST SMALL DITCHER ON THE MARKET



VERMEER'S NEW MODEL W-3 POW-R-DITCHER

Designed Especially For Gas and Electrical Service . . . and Shallow Water Lines

Looking for a rugged, fast, powerful **small ditcher** that will really work? Vermeer's small-but-mighty W-3 Pow-R-Ditcher will fill the bill . . . an ideal unit for contractors, municipalities, utilities and custom operators. The W-3 is available with rubber-tired wheels or crawler tracks and features a completely hydraulic drive system. No gear shifting. An adjustable rubber belt conveyor deposits dirt on either side of ditch. If you are looking for a faster, easy-to-operate multi-purpose small ditcher, mail the coupon. Demonstrations are being scheduled now in all sections of the country. We will be happy to demonstrate the W-3 for you at your convenience.

EQUIPPED WITH 18 H. P. ENGINE

- Digs 3" to 12" wide at 1' to 10' per minute — down to 4' deep
- Has separate hydraulic motor for each set of wheels
- Equipped with transport speed
- Completely hydraulic drive
- Heavy chain, boom and frame
- Available with wheels or tracks

MAIL COUPON FOR COMPLETE ILLUSTRATED LITERATURE AND LOW PRICES

Please send complete information and low price of new W-3 Pow-R-Ditcher.

Name.....

Title or Dept.....

Address.....

City..... State.....

☐ Check here for FREE W-3 demonstration in your area.

VERMEER MANUFACTURING COMPANY
1480 West Washington • Pella, Iowa

co's New York headquarters, it was also learned that the new Norelco series-shunt "E" type transistorized repeater and the Norelco pushbutton PABX will be shown at the USITA Convention.

Copperweld Appoints Gunn Government Sales Manager

COPPERWELD Steel Company has announced the promotion of C. A. Gunn to government sales manager. He will coordinate wire and cable sales to Federal Government Agencies throughout the United

C. A. GUNN

States from his headquarters at 140 S. Dearborn Street, Chicago, Illinois.

Gunn began his business career with the Southwestern Bell Telephone Company in 1941. He served in various plant engineering positions until 1949, taking three years out for naval service, which he completed in 1946. He attended the Rice Institute and the University of Texas, receiving a B.S. degree in Electrical Engineering in 1948.

In 1949, Mr. Gunn joined the Southwestern States Telephone Company and was general commercial superintendent until recalled to the Navy in early 1952. After serving for 18 months as a Lieutenant in the Navy during the Korean situation, he became associated with Reliable Electric Company and Whitney Blake Company as their representative in the southwest.

In January, 1958, he went with

Kellogg Switchboard & Supply Company as industrial sales manager and worked in that capacity until joining the Copperweld Steel Company in September, 1959.

G. B. Foscue Dies

GARLAND B. FOSCUE, 72, of Wilmette, Ill., veteran Independent telephone executive, died on September 8 in Evanston (Ill.) Hospital following a short illness.

Mr. Foscue was born on June 20, 1888, in Waco, Texas. He started his telephone career with the Gary Group in 1911 as collector at the Ennis, Tex. exchange of the Texas Telephone Co. He became manager at Ennis in 1915 and two years later was transferred to Temple, Texas, as manager.

In 1918 he was moved to the general office of the Texas Telephone Co. at Waco as assistant secretary in charge of rates, taxes and public relations. In 1920 he became assistant vice president of the Texas company.

Mr. Foscue was advanced to the general office of Theodore Gary & Co. in Kansas City, Mo., and served in various executive capacities there until 1930 when he was transferred to Chicago as president of Midland Trading Co.

While with Theodore Gary & Co. and the Midland company, he handled the purchase and reorganization of many Independent properties which became a part of the Gary operating group.

In 1933, Mr. Foscue was elected chairman of the board of Keystone Telephone Co., Philadelphia, Pa., which was then controlled by the Gary interests. He remained in Philadelphia until 1935 when he returned to Chicago as vice president of Automatic Electric Co. He served that company and its affiliates in various executive positions until his retirement in January, 1945.

Following his retirement, Mr. Foscue became president and principal owner of Hendricks Telephone Corp. of Clayton, Ind., which he recently sold, and of Consolidated Telephone Co. of Florence, Ky., which he directed up until his death.

Mr. Foscue had long been active in national and state association work

GARLAND B. FOSCUE

and served the United States Independent Telephone Association as a director and a member of the executive committee for several years.

In 1943, he became president of the Independent Telephone Pioneer Association, and because of the progress made in reorganizing the association during his administration, he was re-elected president for a second term in 1944.

Mr. Foscue is survived by his widow, Mary; two sons, Garland B. Jr. of Florence, Ky. and Edward S. of Fitchburg, Mass.; one daughter, Mrs. Mary Dufford of Dallas, Tex. and nine grandchildren.

Henkels & McCoy Installs Half-Millionth Telephone

HENKELS & McCOY recently reached an important milestone in its history with the completion of its 500,000th telephone installation.

MRS. JOHN F. CAUDY, St. Johns, Mich., accepts telephone representing Henkels & McCoy's 500,000th installation from PAUL M. HENKELS (center) and T. AUSTIN SAUNDERS, pres., General Tel. Co. of Mich.

Witnessing the historic event at St. Johns, Mich. were T. A. Saunders, president of the General Telephone Co. of Michigan; Paul M. Henkels, vice president of Henkels & McCoy; Charles A. Muckle, division manager of Henkels & McCoy; and William F. Graef, St. Johns district manager of the General Telephone Co. of Michigan. Mr. Henkels presented Mr. and Mrs. John F. Caudy, in whose home the telephone was installed, with a $50 government bond.

Henkels & McCoy is a well-known name in the telephone industry. From its main office in Philadelphia and the Telephone Operations Office in Elkhart, they have served Independent and Bell Systems companies for several years in the engineering, construction and maintenance of inside and outside telephone plant. In addition to telephone work, Henkels & McCoy maintains crews from coast to coast skilled in power, gas and other communication construction as well as tree trimming and similar utility maintenance operations.

Commenting on the event, T. A. Saunders stated, "We are pleased that this significant installation was established in one of our Michigan exchanges and extend our congratulations to Henkels & McCoy and to the Caudy family. It has been our pleasure to work with Henkels & McCoy for many years. Their growth is a real tribute to the firm and its employes."

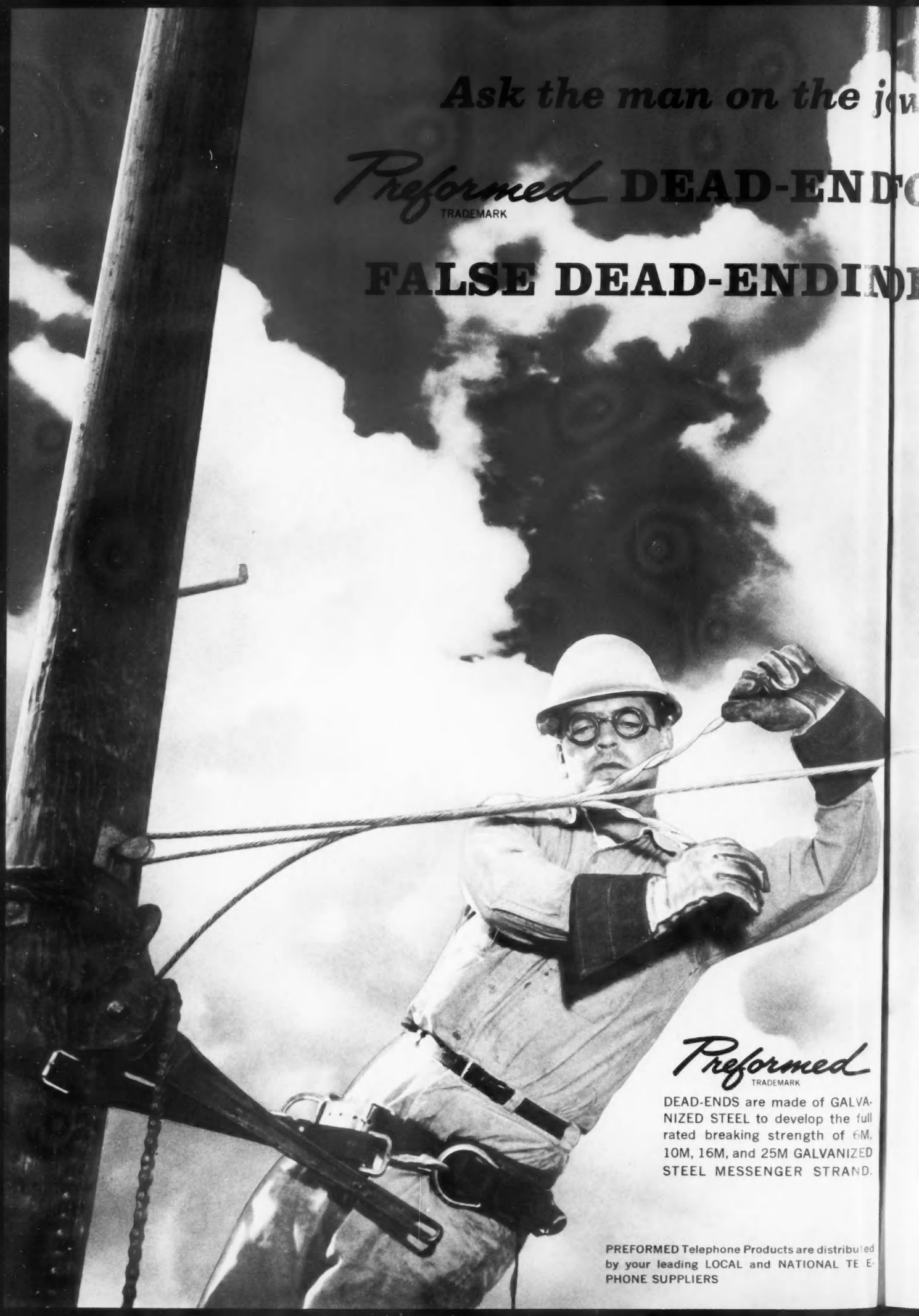
AIEE Switching Systems Committee Announces Fall Program

THE COMMUNICATIONS switching systems committee of the American Institute of Electrical Engineers has announced its program schedule for the fall general meeting to be held October 12-13.

The committee's first session on October 12 will be a field trip to a trial installation of an experimental electronic switching system, arranged by Bell Telephone Laboratories and Illinois Bell Telephone Co.

According to Harold F. May,

Please turn to page 132


Ask the man on the jo
Preformed
TRADEMARK
DEAD-END
FALSE DEAD-ENDIN
Preformed
TRADEMARK
DEAD-ENDS are made of GALVANIZED STEEL to develop the full rated breaking strength of 6M, 10M, 16M, and 25M GALVANIZED STEEL MESSENGER STRAND.
PREFORMED Telephone Products are distributed by your leading LOCAL and NATIONAL TELEPHONE SUPPLIERS

why do LINEMEN PREFER

FOR FASTER, SAFER, NEATER

OF MESSENGER STRAND

FASTER

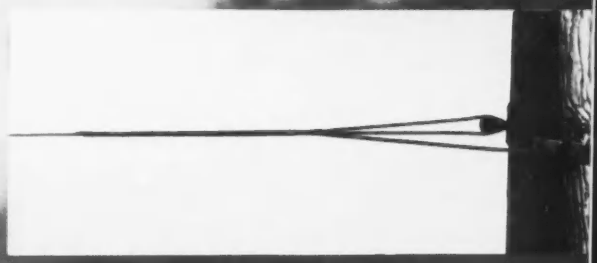
because one-piece PREFORMED Dead-Ends are applied WITHOUT CUTTING THE MESSENGER. They are easily wrapped onto the strand by hand without tools. No bolts to tighten, or jaws to be seated. No clamps that will slip. The tiresome business of threading 10 to 15 feet of messenger strand "through the eye of a needle" is eliminated, and there are no small parts to be dropped.

SAFER

because UNIFORMITY OF ALL APPLICATIONS is assured. There's NO DANGER OF INJURY from strand flying loose when it is being cut or bent because PREFORMED Dead-Ends are wrapped on straight strand. There is a built-in SAFETY FACTOR because this PREFORMED accessory is designed to hold the full strength of EXTRA HIGH STRENGTH strand. WIDE AREA SUPPORT eliminates high stress concentrations of vise-type attachments.

NEATER

because the streamlined one-piece PREFORMED Dead-End looks just like the messenger strand. Material compatible with the strand is used in its manufacture to minimize rust and corrosion.



Write for: Application Procedure, Specifications and Prices

PREFORMED LINE PRODUCTS COMPANY
DEPT. DE-T1

5349 St. Clair Avenue • Cleveland 3, Ohio • EXpress 1-3571
600 Hansen Way • Palo Alto, California • DAvenport 4-2561

Patented — U.S. Patent No. 2,761,27

chairman of the switching systems committee, technical papers to be presented at this meeting include: "Field Trial of an Experimental Electronic Telephone Switching System," by A. E. Joel and W. B. Quirk; "Equipment Design for an Electronic Telephone System," by D. C. Koehler; "A Gas-Tube Space Division Network for an Electronic Telephone System," by K. S. Dunlap and R. L. Simms; "Logic Design and Programming an Electronic Telephone System," by J. A. Harr; "A 2.2 Megabit Photographic Store for an Electronic Telephone System," by T. S. Greenwood; "A 16,000 Bit Temporary Memory for an Electronic Telephone System," by J. E. Mack; "Maintenance and Administration Methods in an Electronic Telephone System," by W. Ulrich; and "Power Supply and Distribution for an Electronic Telephone System," by D. H. Smith, all of Bell Telephone Laboratories.

Two sessions are slated for Oct. 13 at the Morrison Hotel in Chicago. In the morning meeting, four papers will be presented. They include: "Design of Basic Circuits for Electronic Switching System," by A. F. Perkins; "Role of Test Engineer in Assuring Reliability of Electronic Switching Systems," by G. A. Power; "Logic Schematic Drawings for Electronic Switching Systems," by H. Pitlik, all of Stromberg-Carlson Co., Rochester, N. Y.; and "A Survey of Methods of Sorting Letters by Machine," by Dr. M. M. Levy of Levy Associates, Ottawa, Ont., Canada.

The switching systems committee concludes its fall meetings with an afternoon session on Oct. 13. The program features: "General Survey of Direct Distance Dialing," by A. E. Ritchie; "New Nationwide Numbering Plan," by O. Meyers; "Arranging Panel and No. 1 Crossbar Systems for DDD," by E. L. Erwin; and "Automatic Number Identification," by D. N. Pennoyer, all of Bell Telephone Laboratories; "Independent's Conversion to DDD," by F. L. Kahn, Automatic Electric Laboratories; and "All Number Calling and World-Wide Foreign Dialing," by C. M. Conway of American Telephone & Telegraph Co.

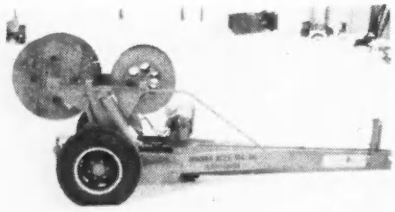
Kittanning Plant Supt., Dave Doverspike, Dies

A. D. DOVERSPIKE, 48, plant superintendent of the Kittanning (Pa.) Telephone Co., died on September 2 after a heart attack. Mr. Doverspike was graduated from Penn State in 1934 with a Bachelor of Science degree in electrical engineering. He was a member of the Sigma Phi Sigma fraternity. He went to work in the Electrical Department of the Schenley Distilleries Inc., Schenley, Pa., after graduation and in 1935 he joined the Westinghouse Electrical Manufacturing Co., Sharon, Pa.

After serving in the armed forces during World War II, he joined Kittanning Telephone Co. in September, 1946, where he rapidly rose to the position of plant superintendent.

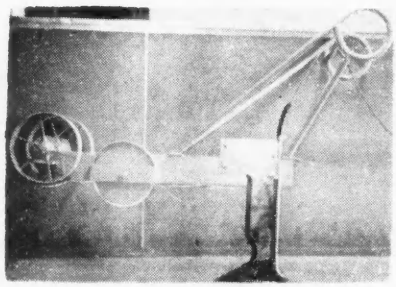
He leaves his widow, Kay Blanchard Doverspike, whom he married in 1934.

RYAN'S HYDRAULIC CONTROLLED CABLE LAYERS AND REEL TRAILERS
— ARE YOUR BEST BUY —
THEY COST LESS TO OWN and LESS TO OPERATE



THE MODEL C FOR LARGE DEEP CABLE
(Now equipped w/two reel arbors)

THE COMB. REEL TRAILER & PLOW
for your wire and small cable job



AND THE NEW FRONT LAWN HAND PLOW
Winch it through yards and parks

With the Ryan patented slope back blade mounted close up to reel, you will lay wire and cable with less tension. The sharp cutting edge blade will pull easier and cause less surface disturbance. THERE IS NO USE MAKING SEVERAL TRIPS. Plow to the required depth in one pass with a RYAN Plow; you can do a better job and complete more miles per day.

IT'S THE CABLE PLOW WITH THE KNOW-HOW

There is fifteen years' experience built into the plows that are now working in all types of soil coast to coast and from Alaska and Canada to the Gulf. Repeat orders are proof of performance. ASK THE USERS.

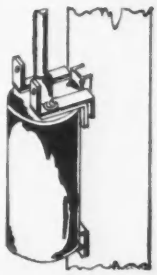
For further information. Write or call.

F. B. RYAN MFG. CO. INC. CHARITON, IOWA Phone PRescott 4-4312

At the U.S.I.T.A. Convention, Chicago Room 621

TELEPHONE LOADING COIL ASSEMBLIES AND ACCESSORIES

★ Steel case assemblies available for manhole mounting and direct earth burial.



TYPE C124 LEAD CASES

Equipped with Types 632 (88MH), 638 (44MH), 642 (88MH) or 641 (44MH) coils. Contain 4 to 76 coils—lead or plastic stubs.

TYPE C125 STEEL CASES

Equipped with Types 632 (22MH), 638 (44MH), 642 (88MH) or 641 (44MH) coils.

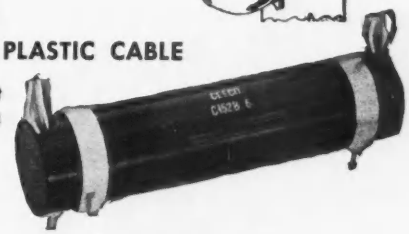
SPLICE MOUNTING ASSEMBLIES

TYPE 167 CASE FOR LEAD CABLE
TYPE 162 CASE FOR PLASTIC CABLE

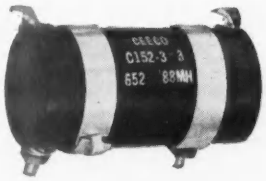
Using one to sixteen Type 632 (88MH), 638 (44MH), 642 (88MH) or 641 (44MH) coils.

TYPE C152 CASE FOR PLASTIC CABLE

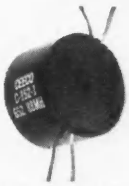
Sizes — One to twenty-eight coils. Using Types C652 (88 MH) or 651 (44MH) coils.



READY MOUNT LOADING COIL CASES FOR SPLICING CASES AND BURIED CABLE TERMINALS



C152-3 (3 COILS)

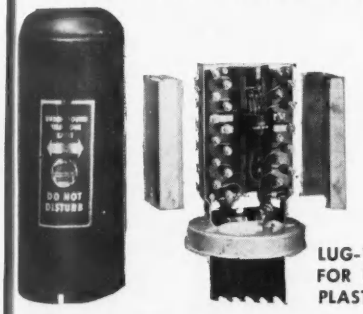


C152-1 (1 COIL) "BOLT MOUNTING"

TYPE C152 CASES

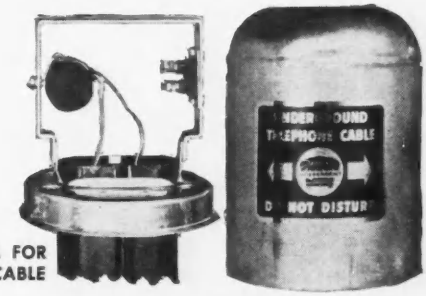
Are equipped with one to 26 type 652 (88 MH) or 651 (44MH) coils. For mounting in splicemaker cases and terminals.

PARKWAY TERMINALS FOR LOADING DIRECT BURIED PLASTIC WIRE & CABLE



LUG-12 TERMINAL FOR BURIED PLASTIC CABLES

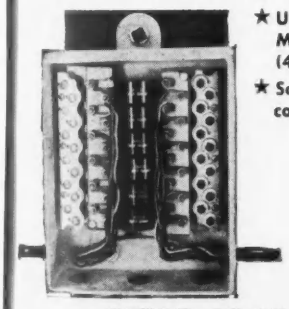
★ Pedestals—Two-piece—six feet long.
★ Pole Brackets—Available for pole mounting.
★ Loading—Load one or more pairs as required.
★ Accessible—For testing, splicing, cross connecting and subscriber distribution.
★ Economical—Buy only what you need —add later.



LU-3 TERMINAL FOR BURIED WIRE AND CABLE

TYPE 177 TERMINALS

FOR 6, 11, 12, 16 AND 18 PAIR RURAL DISTRIBUTION WIRE



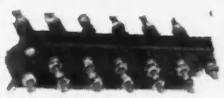
★ Using Type 637A (88 MH) or Type 637B (44MH) coils.
★ Sold with or without coils.

TYPE 637A COIL

NONPROTECTED READY MOUNT ASSEMBLIES

(FOR ALL STANDARD PARKWAY TERMINALS)

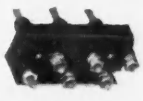
16 PAIR No. CP16-137



12 PAIR No. CP16-136

2 PAIR No. CP16-134

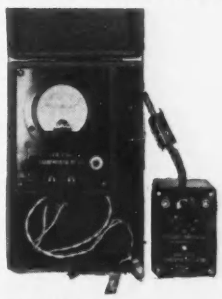
ONE PAIR No. CP16-133



6 PAIR No. CP16-135

TYPE C16A

TRANSISTORIZED 1000 CYCLE GENERATOR AND DECIBEL METER



CEECO LOADING COILS ARE SOLD BY YOUR TELEPHONE EQUIPMENT SUPPLIER

COMMUNICATION EQUIPMENT AND ENGINEERING COMPANY
5646 West Race Avenue — Chicago 44, Illinois
Phone EStebrook 8-3109

MODEL TTS 9S MULTI-FREQUENCY PRECISION MILLIWATT REFERENCE GENERATOR

The growing need for transmission measurements on at least 3 frequencies, and preferably 6, requires a precision milliwatt reference generator capable of automatic cycling through these frequencies to avoid sending a man to switch frequencies at the signal source.

The Model TTS 9S Reference Tone Generator is a transistorized multi-frequency generator designed to supply a 0 dbm signal at up to 6 frequencies, which are automatically switched in sequence. The basic unit supplies 3 frequencies. Accessories permit adding up to 3 more frequencies, as well as insertion of an external signal, such as a noise generator, in the signal sequence.

THE MODEL TTS 9S FEATURES

- Transistorized Design
- Constant Output Level
- Two Independent Outputs
- 600 and 900 Ohm Options
- Three Frequencies
- Automatic Frequency Switching
- 48 Volts Battery Power
- Low Installation Costs

Also available—Model TCC 9 Carrying Case and Model TTS 9 Single Frequency Reference Generator

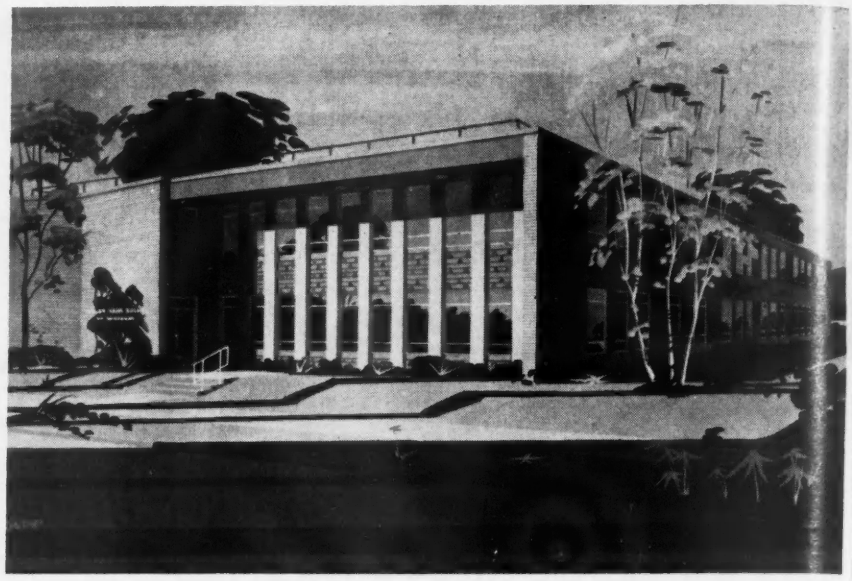
An extensive line of telephone test equipment available from —

NEC

NORTHEAST ELECTRONICS CORPORATION

AIRPORT ROAD
CONCORD, NEW HAMPSHIRE

See our complete line at the USITA Convention in Chicago, Room 652 A.



New Milwaukee office of L. M. Berry & Co.

L. M. Berry & Co. Announces New Branch Office Buildings

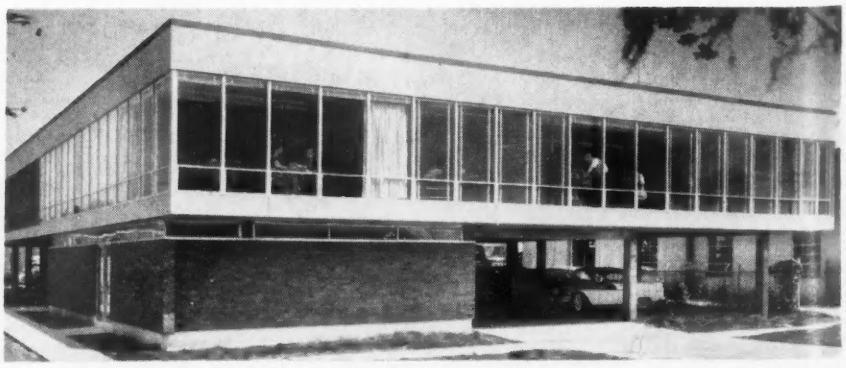
KEEPING pace with the increasing service demands of its Bell and Independent telephone company customers, L. M. Berry & Company, national Yellow Pages sales agency, has announced that new office buildings have been acquired for the company's branch operations in Milwaukee and New Orleans.

The Milwaukee, Wis. office is now under construction and is expected to be completed by December, 1960. It is located near North 76th Street and West Hampton Ave. and will be known as the Yellow Pages Building of Wisconsin. The modern two-story structure will be 76 feet wide and 110 feet long. It will have 19,000 square feet of floor space, about double the size of the present office at 611 North Water Street, which has served as a central office for Berry's Wisconsin operations for 13 years.

An unusual feature is a portion of the building's front. Constructed of buff face brick, it has been designed to resemble a large (16′ x 22′) open telephone directory. The remainder of the front exterior consists of white brick columns separating a wide expanse of glass.

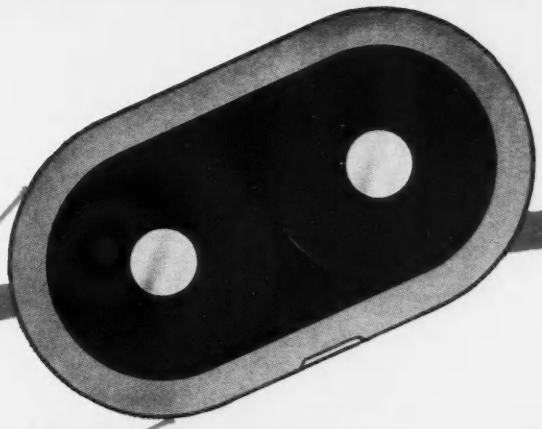
The L. M. Berry & Co. organization in Milwaukee handles directory advertising sales for the Wisconsin Telephone Co. in Milwaukee and in 76 other Wisconsin directories, and is composed of some 143 personnel.

The new office building which serves as headquarters for the Berry operation in Louisiana was completed in March, 1960. It is located at 1021 South Jefferson Davis Parkway, New Orleans. The building is elevated above the street level, providing parking space beneath the building. Ceiling-to-floor glass walls on two sides of the building accent the architectural style and provide natural lighting. The building has 10,147 square feet of floor space.



L. M. Berry & Co.'s New Orleans' office

NEW



A greatly enlarged section of one pair.

JACKETED-PAIR Distribution Wire

Will serve you longer . . .will provide the true economy that high quality always gives.

NEW

- ★ **TOUGHNESS** — Withstands unusual physical abuse.
- ★ **ELECTRICAL STABILITY** — Minimizes attenuation changes from dry to wet weather.
- ★ **EASY PAIR IDENTIFICATION** — Single, two-color jacket codes individual pairs.
- ★ **EASY ACCESS TO PAIRS** — In all pair sizes each pair appears on the outside at frequent intervals.
- ★ **EXTREMELY LOW RESISTANCE UNBALANCE**

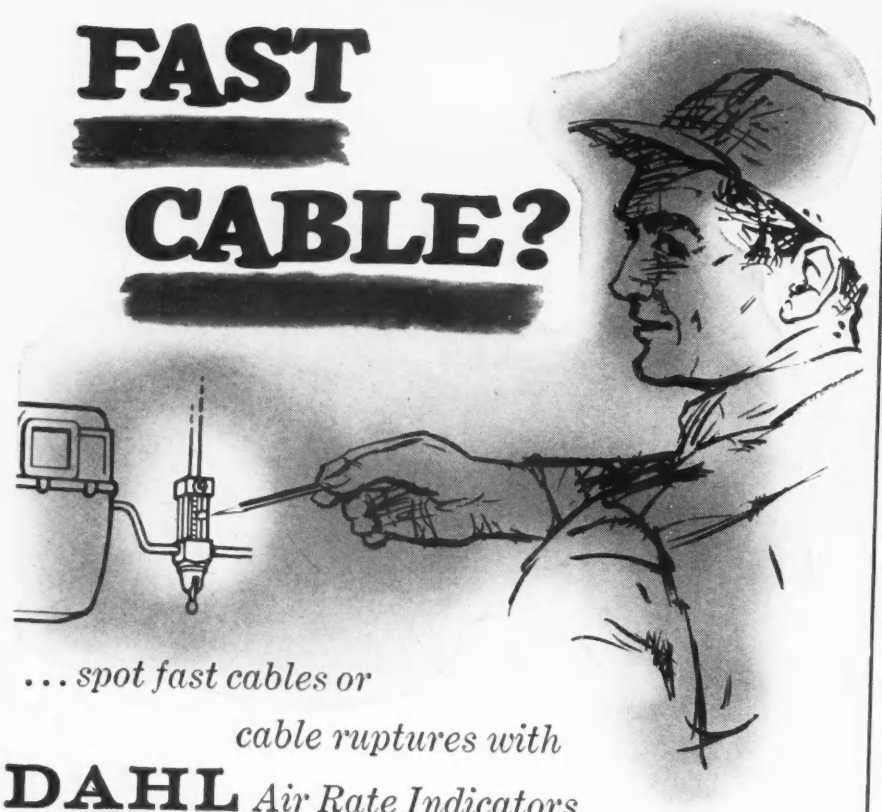
High density polyethylene insulation . . . Extra-heavy wall thicknesses . . . Fully color-coded common jacket over each pair.

WB WHITNEY BLAKE CO.

NEW HAVEN 14, CONNECTICUT

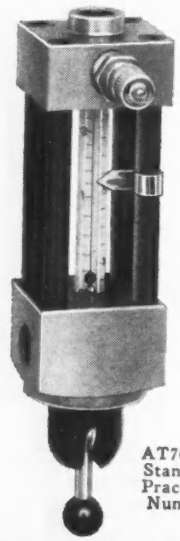
TELEPHONE CHestnut 8-5515 TWX: NH84

FAST CABLE?



. . . spot fast cables or cable ruptures with

DAHL *Air Rate Indicators*

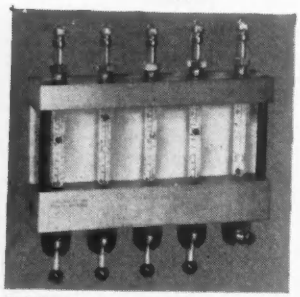


AT7684X Standard Practices Number

Specifically designed for Bell Telephone Laboratories, Incorporated to include:

1. Single-tube design for full scale reading — no hidden cost for extra parts
2. Metal Support Columns to protect glass tubes from accidental breakage
3. Integral **Packless** valve with indicating handle
4. Integral Header design
5. Complete with Pressure test valve and cap (AT 6419) — factory tested
6. All metal connections — 1/8" IPS

Tried and proven in all 50 states, *Dahl Air Rate Indicators* have been off-the-shelf items since 1956.



Air Rate Manifolds also available

CALL OR WRITE FOR CATALOG T-1
CLIFFORD 3-9500
86 TUPELO STREET, BRISTOL, RHODE ISLAND

GEORGE W. DAHL COMPANY INC.

VALVES AND CONTROLS FOR COMMUNICATIONS, PROCESS, AIRCRAFT AND MARINE INDUSTRIES

considerably more than the Division's former office at 1539 Jackson Avenue.

The Louisiana division employs 108 persons, and is responsible for the selling and processing of directory advertising for the Southern Bell Telephone & Telegraph Co. throughout the state. The Division handles sales for 63 directories, including New Orleans.

These new offices represent the latest additions to L. M. Berry & Company's continuing expansion program. Since 1954, practically all of the company's 13 divisions and many of its district offices have been provided new office buildings.

Brown Appointed Sales Engr. Of Lynch Chicago Office

ALAN J. BROWN has been appointed a sales engineer in the Chicago office of Lynch Communication Systems Inc., replacing Douglas Carnes, who recently was transferred from Chicago to open a new Lynch office in Kansas City.

The office is located at 2045 North Cornell Ave., Melrose Park, Ill., in the district office of Graybar Electric Company, U. S. distributor of the telephone, data transmission and control equipment designed and manufactured by Lynch.

Territory covered by the Chicago office includes most of Arkansas, parts of Mississippi, Tennessee, Missouri, Indiana, Iowa and Michigan; all of Illinois, Minnesota, Wisconsin and the Dakotas, and parts of Wyoming and Montana.

Prior to joining the Lynch firm last month, Brown had been staff engineer, carrier specialist with Automatic Electric Sales Corporation for almost four years, and a system test technician with Lenkurt Electric Company.

Frank & Gaiennie To New Posts at Holan

ARTHUR C. Frank has been promoted to district manager and Daryl E. Gaiennie has been appointed assistant sales manager of the Holan Corporation.

Frank, who has been with Holan's sales department for seven years, be-

comes district manager in one of the company's major territories, assuming sales responsibilities in eastern Ohio, western New York, and a large section of Pennsylvania. In addition to holding key posts in the Cleveland sales office, he served for two years as sales manager of Holan Corporation of Georgia, a Holan Division located in Griffin, Georgia.

Gaiennie, who becomes assistant sales manager, has extensive experience in transmission and distribution. He joins Holan after more than 20 years in the utility field. He was assistant superintendent of transmission and distribution for the Savannah Electric & Power Company before assuming his new post and prior to that was vice president and general manager of Missouri Service Co., Northwest, Mo.

ITT Kellogg Names Smith Hawaiian Mgr.

THOMAS R. SMITH has been appointed the first manager of ITT Kellogg's new Hawaiian regional office.

Smith began his telephone career as a cable splicer's helper with Wisconsin Telephone Co. in 1940. He was a lineman when he entered the Army Signal Corps in 1942.

He was employed by Kellogg as a field representative from 1950-52, then became commercial manager for the Mansfield (Ohio) Telephone Co. He was chief engineer when he resigned to rejoin Kellogg in 1958 as regional manager of ITT Kellogg's West Coast region.

Stationary Battery Brochure

POWER PLANT and power distribution engineers, railway signalling engineers, telephone system engineers and those responsible for emergency lighting and power will be interested in the new 12-page brochure published by *Gould-National Batteries, Inc., Dept. TE&M, Trenton, N. J.*, on Gould Plante batteries in Plastrite jars for stationary service.

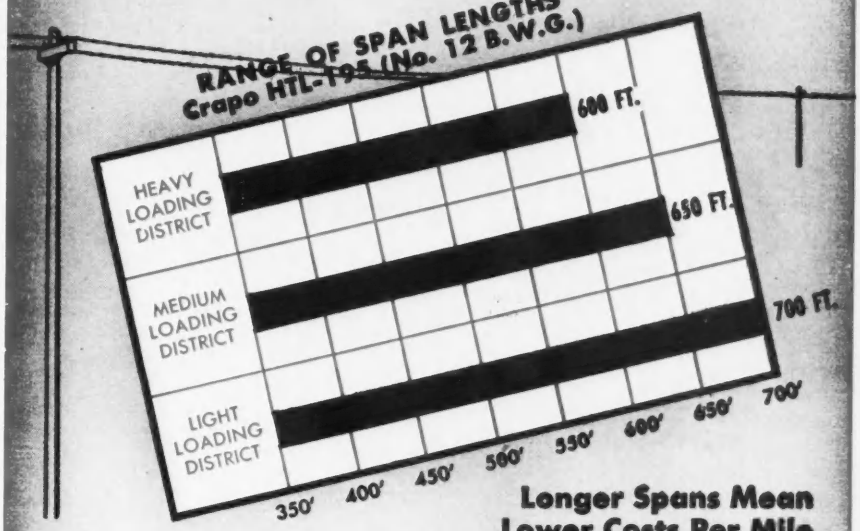
In addition to descriptive data and illustrations of the Plante battery, the catalog presents discharge characteristics in four graphs. Engineering specifications are given in four tables.

Crapo

HTL-195

FOR EXTRA LONG SPAN RURAL LINES

The *NEW LOWER* Resistance Extra-High Tensile Line Wire

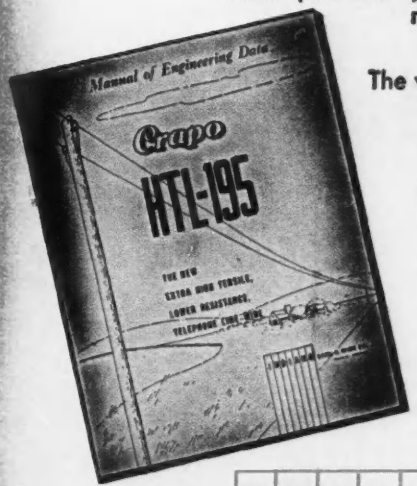


Longer Spans Mean Lower Costs Per Mile

You can cut the number of pole structures to a minimum when you use *Crapo* HTL-195 in building rural telephone lines. Extra long span construction, made possible by the high physical strength of this new wire, means marked savings in material and installation costs.

The voice transmission quality of *Crapo* HTL-195 is equal to that of *Crapo* HTL-135 and superior to older grades of ferrous wire.

Pertinent technical data have been prepared to assist engineers in designing and building extra long span lines with *Crapo* HTL-195.



WRITE TODAY for FREE COPY of the CRAPO HTL-195 "Manual of Engineering Data" No. A-195

INDIANA STEEL & WIRE COMPANY, INC.
MUNCIE, INDIANA

BUDELMAN bec

TYPE 251A

VOICE FREQUENCY REPEATER

A new exciting development from Budelman. Four of these new transistorized repeaters fit on a mounting shelf in only 1¾ inches of rack space.

Up to 20 db gain in both directions. Battery drain from 12, 24 or 48 volt battery is only 3.4 milliamps. Low price, high reliability. Send for data sheets today.

BUDELMAN

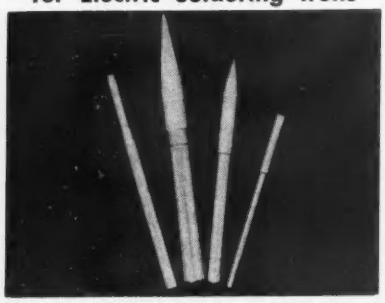
ELECTRONICS CORPORATION

375 FAIRFIELD AVE. STAMFORD, CONN.

DISTRIBUTED BY: Buckeye Telephone & Supply Co., 1250 Kinnear Rd., Columbus 21, Ohio. Empire Telectronics, 5708 Balsam St., Arvada, Colo. The Engineering Service, Box 178, Butte, Mont. J. W. Flint, 325 Virginia, Ponca City, Okla. Nelson Electric Supply Co., 1123 Slocum St., Dallas 7, Texas. Somerset Telephone & Supply, North Anson, Me. SpaceCom, Inc., 2331 4th St., Santa Rosa, Calif. Tele-Radio Systems, Ltd., 3633 Dundas St., W., Toronto 9, Ont. EXPORT: Westrex Corp., 540 W. 58th St., New York 19, N. Y.

Increase Production Efficiency

Use LERLOY Armor-Clad TIPS for Electric Soldering Irons



We are the originators of NON-FREEZING and Long-Lasting Soldering Iron TIPS Patent Pending.
LERLOY Armor-Clad TIPS do not require maintenance.
LERLOY Armor-Clad Tips speed production, eliminate down time, provide uniform joints.
Sizes and Shapes to Fit All Standard Irons.
We also manufacture TIPS to Your Specifications.
Inquiries for Distributorships invited.
Manufactured by:

ENGINEERING & ELECTRONIC DEVICES, INC.

1024 North McCadden Place, Los Angeles 38, Calif. HO 3-4175

JACK G. ANDERSON has been appointed vice president for government relations at Stromberg-Carlson. Anderson comes to Stromberg-Carlson from Hoffman Electronics Corporation of Los Angeles, where he was vice president for marketing. He had been with Hoffman since 1954.

Black and Taylor Join Copperweld Steel Company

GEORGE Hamburger, manager of sales of the Wire & Cable Division of Copperweld Steel Company, has announced the appointment of Paul L. Black as sales engineer in Western Pennsylvania, West Virginia and several counties in Kentucky. Black will reside in Pittsburgh and will be under the jurisdiction of Copperweld's Eastern sales district located in New York City. At the same time, he stated that Robert E. Taylor has joined Copperweld as an engineer in the sales engineering department at Glass-sales engineering department.

PAUL L. BLACK

ROBERT E. TAYLOR

Black was born in Vandergrift, Pennsylvania, and is a graduate of the University of Pittsburgh. He was associated with Hubbard & Company as district sales manager at Nashville, Tennessee, and prior to that was a sales engineer for the same concern in Eastern Pennsylvania, Maryland and Delaware.

A native of Wilson, North Carolina, Taylor received a B. S. degree from the University of North Carolina. Before joining Copperweld, Taylor was associated with Kaiser Aluminum & Chemical Corporation. At one time, he was outside sales and regional telephone manager of General Cable Corporation.

Bishop Appoints McCormack Vice President of Sales

FRANK X. McCormack has been named vice-president of sales for the Bishop Manufacturing Corporation and the Bishop Export Company, Cedar Grove, N. J.

McCormack joined the Bishop Company in 1952 as sales engineer and became assistant sales manager in 1955. In 1958 he was named sales manager in charge of the Electrical Insulating Tape Division.

AE Sales Names Wilson Carrier & Radio Engineer

ROGER A. WILSON has been named a carrier and radio staff engineer for Automatic Electric Sales.

Headquartered in the Minneapolis

office, he will provide engineering and consulting service for customers in the north central district which includes Iowa, Colo., Minn., Wis., Neb., N. D., S. D., parts of Mich., and Mont.

J. K. Johnston Dies

J. K. JOHNSTON, 93, founder and former secretary-treasurer of the Independent Telephone Pioneer Association, died September 1 at his Indianapolis home.

Mr. Johnston was a specialist in organizing, managing, improving and appraising telephone firms, organizing one of the first Ohio telephone companies at Rushylvania in 1897.

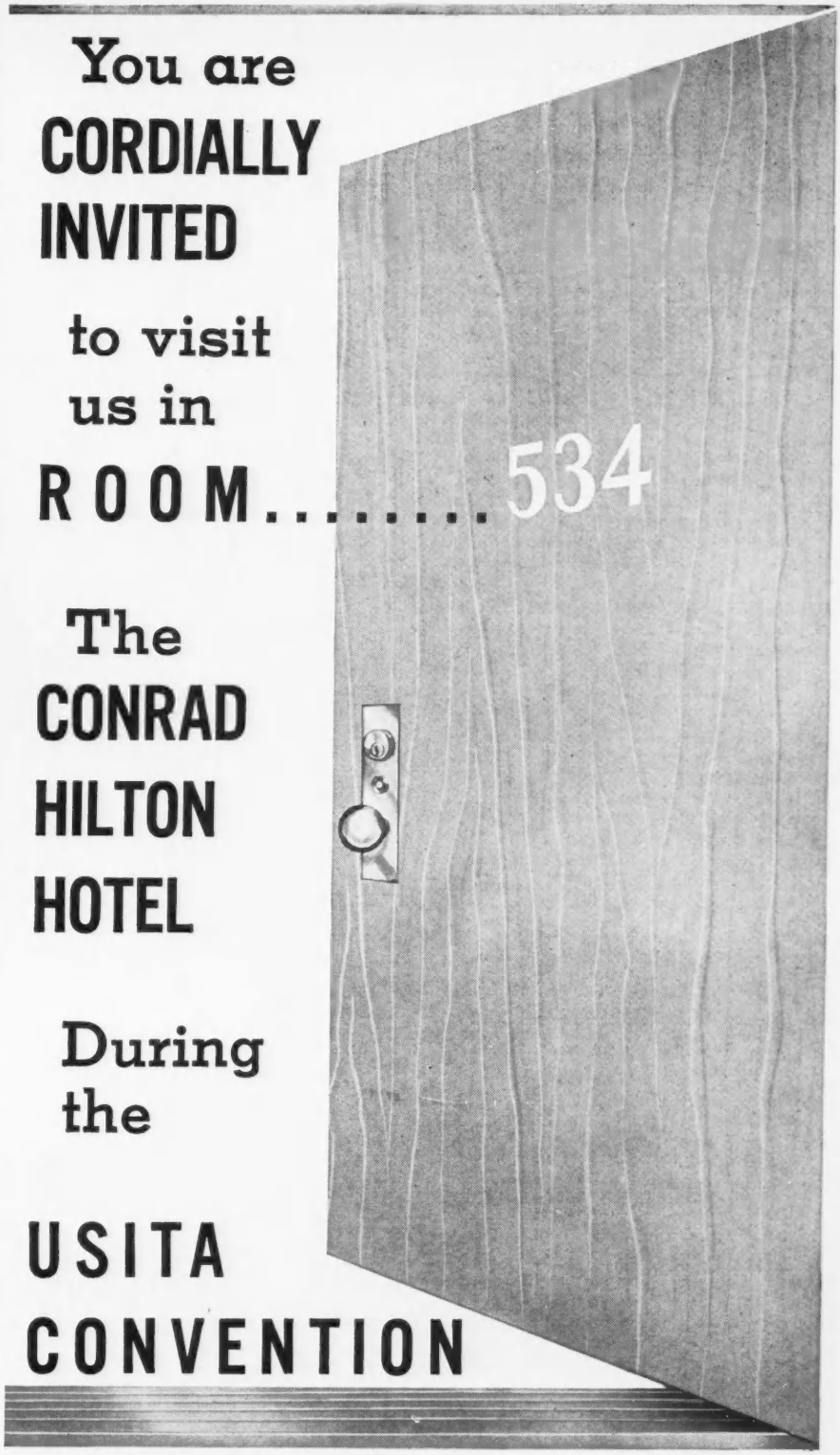
J. K. JOHNSTON

Later, Mr. Johnston organized and managed telephone firms at Port Clinton, O.; Lexington, Ky.; Elkhart, Ind.; and New Philadelphia and Sandusky, O. In 1913 he rebuilt the Home Telephone Co., Crawfordsville, Ind., and later became a telephone engineer for the Public Service Commission of Indiana.

Shortly afterward he opened offices in Indianapolis as a telephone engineer, and for over 30 years he appraised properties and appeared in rate cases before public service commissions in several states.

In 1921 Mr. Johnston organized the Independent Telephone Pioneer Association and was its secretary-treasurer until 1946.

Mr. Johnston was a member of Eastminster United Presbyterian Church, Elks and Odd Fellows lodges, Sons of Union Veterans of the Civil War, Hoosier State Chapter 16 of the Telephone Pioneers of America, and the Independent Telephone Pioneer Association.



WB WHITNEY BLAKE CO.

Telephone: CHestnut 8-5515
TWX: NH 84

TELEPHONE MARKET PLACE

Largest Circulation Serving The Telephone Industry

HELP WANTED

CABLE SPLICERS, Station Installers. Equipment Installers, Linemen. Experienced men needed. Steady work, good pay. Henkels & McCoy, 1800 Johnson Street, Elkhart, Indiana, or 6100 N. 20th St., Philadelphia, Pa.

EXPERIENCED COMMERCIAL MANAGER for a rapidly expanding REA financed Class A company. Responsibilities include merchandising management for 9 dial exchanges serving total of 3,700 stations. Please submit references and complete resume to the attention of General Manager, Western States Telephone Company, Inc., Box 305, Holbrook, Arizona.

AMBITIOUS MEN — Qualified as station installers, equipment installers, cable splicers, linemen. Work in midwest, Harris-McBurney Co., Inc., P. O. Box 267, Jackson, Michigan.

WANTED — AT THIS TIME — CABLE SPLICERS, experienced men desirous of permanent position with large, rapidly-growing telephone company located in Florida. All replies confidential. Please send resumé and photograph to Box 132, Telephone Engineer & Management.

CABLE FOREMAN

An unusual opportunity exists for a well-qualified telephone outside plant construction foreman who is particularly well-versed in gas pressurized cable techniques.

●

INSTALLATION SUPERVISOR

MAINTENANCE SUPERVISOR

●

Candidates in the above categories must possess extensive inside plant experience with particular emphasis on carrier system installation checkout and maintenance.

●

Submit confidential resume including past experience in strict confidence to:

MR. H. J. RECKAS,
PERSONNEL MGR.

Advanced Communications Engineering

A Division Of
Cook Electric Company
Chicago, Illinois

6038 Twenty Eighth Ave., S. E.
Washington 23, D. C.

POSITION WANTED

Business Management Degree

Experience: 4 years central office, 2 years outside plant and 1 year personnel-supervising 73 people. Interested in aggressive company with future opportunities.

Resume on request.

Write Box 133, c/o Telephone Eng. & Mgmt.

FOR SALE

MAGNETO TELEPHONES — Leich 901 wall or desk magneto telephones. Cleaned, tested and guaranteed, $16.50 each. As removed from service $15.00 each. Turtle Lake Tel. Co., Turtle Lake, Wisc.

1 National Cash Register Utility Billing Machine, Model #AH20812 (111-T)
1 Addressograph Complete, Model #1937-B
1 Underwood Sunstrand Bookkeeping Machine, Model #B-284081
2 National Cash Register Toll Billing Machines, Model SP31-10-08 (16ATB)
Write: Central Telephone Co., P. O. Box 2385, Hickory, North Carolina.

PARTS FOR 302 W. E. TELEPHONES, guaranteed, clean, complete, operational. All prices lots of 50 or more. P-29500 Switch-hook spring assembly 20¢ each. F1 Transmitter 35¢ each. HA1 Receiver 50¢ each. 195-A Condenser 25¢ each. F1AW-3 Handsets $1.25 each. 101-A Induction Coil 35¢ each. Kellogg 20 and 30 cy. and W.E. straight line ringers 75¢ each. 5H Dials $1.50 each. Write — M. R. Anderson, 2511 W. Jean St., Tampa, Fla. Phone RE 7-2998.

FOR SALE

One North Relay Board Type MCXR1000
80 lines equipped
2 paystation lines
2 toll trunks
8 links
5 Connector controls
30 amp Raytheon charger
Divided code ringing
Cook 101 pair mainframe
No batteries

One North All Standard Relay Board Type 100
60 lines equipped
2 paystation lines
2 toll trunks equipped
6 links
Divided code ringing
Cook 51 pair mainframe
1 set batteries 4 years old

SULLY BUTTES TELEPHONE COOPERATIVE INC.
Highmore, South Dakota

NEW—COOK XB. POLE TERMINALS, 16 PAIR — UNPROTECTED, WITH 5 FT. STUBS. $6.00 EA.

NEW—SPAN CLAMPS, MESSENGER WIRE TYPE. .10c EA.

REBUILT—W. E. DIALS. 5-H — or 6A — $2.50 EA.

USED—GOOD—33 CALCULAGRAPHS. $35.00 EA.

REBUILT — OR SOLD AS REMOVED FROM SERVICE, STROMBERG SUBSCRIBER SETS, 1250 WALL — DESK — 1243 — 1443 — 1543-A. WITH DIALS, ST LINE — or 20-30-40-50 CY.

INDEPENDENT TELEPHONE REPAIR CO.
2137 West 21st St. Chicago 8, Ill.
LAfayette 3-5439

WESTERN ELECTRIC PBX SWITCHBOARDS

W. E. #551-A PBX Switchboards, 30 to 40 lines, 5 to 10 trunks, 10 cord circuits. (As removed from service or Reconditioned)

W. E. Type 52 Operators Sets (New)

Battery Eliminators and Subcycles (Recond.)

BUCKEYE TELEPHONE & SUPPLY CO.

1250 KINNEAR RD. COLUMBUS 21, OHIO

HUDSON 8-0655

Telectric probably has it (for less)

MILLION DOLLAR STOCK TELEPHONE EQUIPMENT

Genuine—Western Electric, Automatic Electric, Stromberg Carlson, Kellogg, Clare, Etc.

SWITCHBOARDS
PBX—CORDLESS
CB—UNIVERSAL
MAGNETO
FIRE REPORTING
DISPATCHING
(Hundreds In Stock)

RELAYS
LINE & CUTOFF
CORD CIRCUIT
TRUNK
POLARIZED
STEPPING
SPECIAL PURPOSE
RELAYS—RACKS
(100,000 In Stock)

COILS
REPEATING
RETARD
INDUCTION
KICK COILS
LOADING
BATTERY-FEED
(Thousands In Stock)

STROWGER SWITCHES
REPEATERS
MANY TYPES

KEYS
SWITCHBOARD
PUSH-TURN
TURRETT

CONDENSERS
FOIL, MICA
FILTERS
NETWORKS

CORDS—PLUGS
SWITCHBOARD
TEST
PATCH
TELEPHONE
3 COND. TINSEL
CORDAGE

LAMPS
SOCKETS
MOUNTINGS
CAPS

RESISTORS
W. E. 18 & 19 TYPE
WIRE WOUND

JACKS
INDIVIDUAL
STRIP MOUNTED
(25,000 In Stock)

POLE HARDWARE
(300 Tons In Stock)

FUSES
W. E. 35 TYPE
MDF
SUBSTATION
PANELS
HEAT COILS

TELEPHONES
CB—DESK & WALL
MAGNETO
ARMY FIELD PHONES
WEATHERPROOF
KEY SETS
PARTS
PROTECTORS

M.D.F.
FRAMES
RACKS
PROTECTORS
TERMINALS
LADDERS
TEST SHOES

WIRE
COPPERWELD
COPPER—STEEL
FRAME—DUCT
ALUMINUM
DROP
ARMY FIELD
DIRECT BURIAL
POWER DIST.

STRAND
GUY
MESSENGER

CABLE
SWITCHBOARD
PLASTIC & BRAID
LEAD COVERED
SUBMARINE
DIRECT BURIAL
MULTIPLE DROP
FLEXIBLE ELEVATOR
COPPERWELD

RACKS
OPEN
ENCLOSED
ALL SIZES
CABLE RACK
FITTINGS

TOOLS
WIRE GRIPS
STRAND GRIPS
CABLE GRIPS
SWITCHBOARD
TRANSPOSITION
CORD TIPPING
LINEMAN'S
NICOPRESS
SLEEVES

ALSO
MILITARY

POWER EQUPT.
CHARGERS
BATTERY
ELIMINATORS
SUBCYCLE
TELERING
BATTERIES
RACKS
VOLTAGE RELAYS
STAND-BY
MOTOR GENERATORS

ALARMS
BELLS
GONGS
BUZZERS
HORNS
ANNUNCIATORS
CODE CALL
SINGLE STROKE
RELAYS

TEST SETS
TOLL
WIRECHIEFS
CABLE
TRANSMISSION
CARRIER
SPLICER
PULSING
PORTABLE
PHONES

REPEATERS
COMPOSIT SIGNAL
SET
V. F. RINGERS
LONG LINE UNITS
CARRIER TERMINALS
CARRIER FILTERS
CARRIER TELEGRAPH

TERMINALS
CABLE—WIRE
POLE—INSIDE
UNDERGROUND
W. E.
COOK
RELIABLE

WIRED COMMUNICATION EQUIPMENT and PARTS

Telectric Co.

DDD-213—Richmond 8-2249
1218 Venice Boulevard, Los Angeles

FOR SALE

NORTH McBERTY MCX-500 ALL RELAY SYSTEM—400 private lines equipped with Code Ringing for 8 parties per line. Maximum 3200 Party Lines (100 Lines Additional Capacity).

4 Groups, 9 links per group, 9 manual office trunks, 20 pay station lines, 4 P.B.X. Groups, 8 outgoing and 7 incoming trunks with necessary power and signalling equipment for operation.

Two 110 Volt Rectifiers for Charging Battery, operated on 24 Volt DC System.

Condition Excellent—used by Southern Bell Telephone Company. Approx. 10 Years Old. Can be added to other existing equipment. Fully automatic—no personnel needed to operate. Blueprints and test equipment included in Purchase Price. Ideal for small town where a modern communications system is desired. Also ideal for a community, large company or plantation style town where private company controls its own telephone exchange.

AVAILABLE FOR INSPECTION GREENVILLE, S. C.

GENERAL PURPOSE MACHINERY & EQUIPMENT CO., S.A.

505 — 8th Avenue NEW YORK 18, N. Y.

KANT TWIST CLAMPS
HAND CLAMPS — FIXTURE CLAMPS
Write for Literature
SAXTON MANUFACTURING CORP.
1517 N. Potrero Ave., So. El Monte, Calif.

WANTED TO BUY

TELEPHONES — Any condition. Desk stands, wall sets, etc. Advise quantity available. Write Box 78, c/o TE&M.

WANTED — All makes, old telephones. Our truck will pick up and pay you cash on the spot. Telephone Co., Turtle Lake, Wisconsin.

CONSIDER purchasing any small Telephone company Box 129, c/o TEM, 7720 Sheridan Rd., Chicago, Illinois.

BUY OR MERGE — Well-established telephone equip. manufacturer with international distribution desires to purchase or merge smaller company with good potential but limited sales. Write Box 134, c/o TE&M.

BELTS-CLIMBERS

BELTS — CLIMBERS — Complete Linemen's equipment, W. M. Bashlin Co., Bashlin Bldg., Grove City 1, Pa.

BOOTHS

BOOTHS — Telephone — Outdoor — Indoor — Steel — Stainless Steel — Sherron Metallic Corp., 1201 Flushing Ave., Brooklyn 37, N. Y.

Order Your Personal Copies of TE&M Today

If you do not receive your personal copy of each issue of TELEPHONE ENGINEER & MANAGEMENT, why not enter your Personal Subscription sent to your home or office?

1 Year - 24 Big Issues - $4.00

CLAMPS

KANT TWIST CLAMPS
HAND CLAMPS — FIXTURE CLAMPS
Write for Literature
SAXTON MANUFACTURING CORP.
1517 N. Potrero Ave., So. El Monte, Calif.

COIN COUNTERS

PAY PHONE COLLECTIONS are accurately counted and proven with a fast Coin Counting Machine. Rental rate is insignificant. Watkins Company, Box 146, Napoleon, Ohio.

CONSTRUCTION EQUIPMENT

BORING MACHINES, EARTH — Highway Trailer Co., Edgerton, Wisc.

HYDRAULIC CONTROL
STERLING
EARTH BORING MACHINES
WYOMING VALLEY EQUIP. DIV.
714 WYOMING AVE. KINGSTON, PA

CORDS

CORDS, Switchboard (with or without plugs), Instrument (straight and retractible cords in eleven colors. — Commercial Cord Co., Inc., 26 Main St., Clifton Springs, New York.

DIAL REBUILDING

DIALS, Rebuilding
Teiephone Repair & Supply Co.
1760 W. Lunt Avenue, Chicago 26, Ill.

DECALS

DECALS
Made for trucks and equipment
Small or large quantities
Write for free catalog.
MATHEWS COMPANY
827 S. Harvey Oak Park, Ill.

FIXTURE CLAMPS

KANT TWIST CLAMPS
HAND CLAMPS — FIXTURE CLAMPS
Write for Literature
SAXTON MANUFACTURING CORP.
1517 N. Potrero Ave., So. El Monte, Calif.

HAND CLAMPS

KANT TWIST CLAMPS
HAND CLAMPS — FIXTURE CLAMPS
Write for Literature
SAXTON MANUFACTURING CORP.
1517 N. Potrero Ave., So. El Monte, Calif.

POLES

POLES, Southern Yellow Pine — Texas Creosoting Co., Orange, Texas.

HELP WANTED

PROJECT MANAGER
STAFF ENGINEERS
OUTSIDE PLANT
ENGINEERING SUPERVISOR

Immediate openings in the above categories for those well qualified. Broad communications engineering experience is required, combined with a valid history of supervisory experience.

•

Opportunities will be unlimited with a new and growing division of a long established progressive firm.

•

Submit a complete resume including minimum salary requirements in strict confidence to:

MR. H. J. RECKAS, PERSONNEL MGR.

Advanced Communications Engineering

A Division Of
Cook Electric Company
Chicago, Illinois
6038 Twenty Eighth Ave., S. E.
Washington 23, D. C.

POLES

POLES. Southern Yellow Pine — Taylor Colquitt Company, 217 Main St., Spartanburg, S. C.

POLES, Creosote & Creosote Penta-Treated, Southern Yellow Pine — Piedmont Wood Preserving Co., P. O. Box 700, Augusta, Georgia.

POLES • CROSSARMS
RAIL or TRUCK DELIVERY
Pressure-treated to your specifications. 16 sales offices, 34 plants serving you. See Yellow Pages, write or call Pittsburgh EXpress 1-3300.
C-10
KOPPERS COMPANY, INC.
Wood Preserving Division
777 Koppers Bldg., Pittsburg 19, Pa.

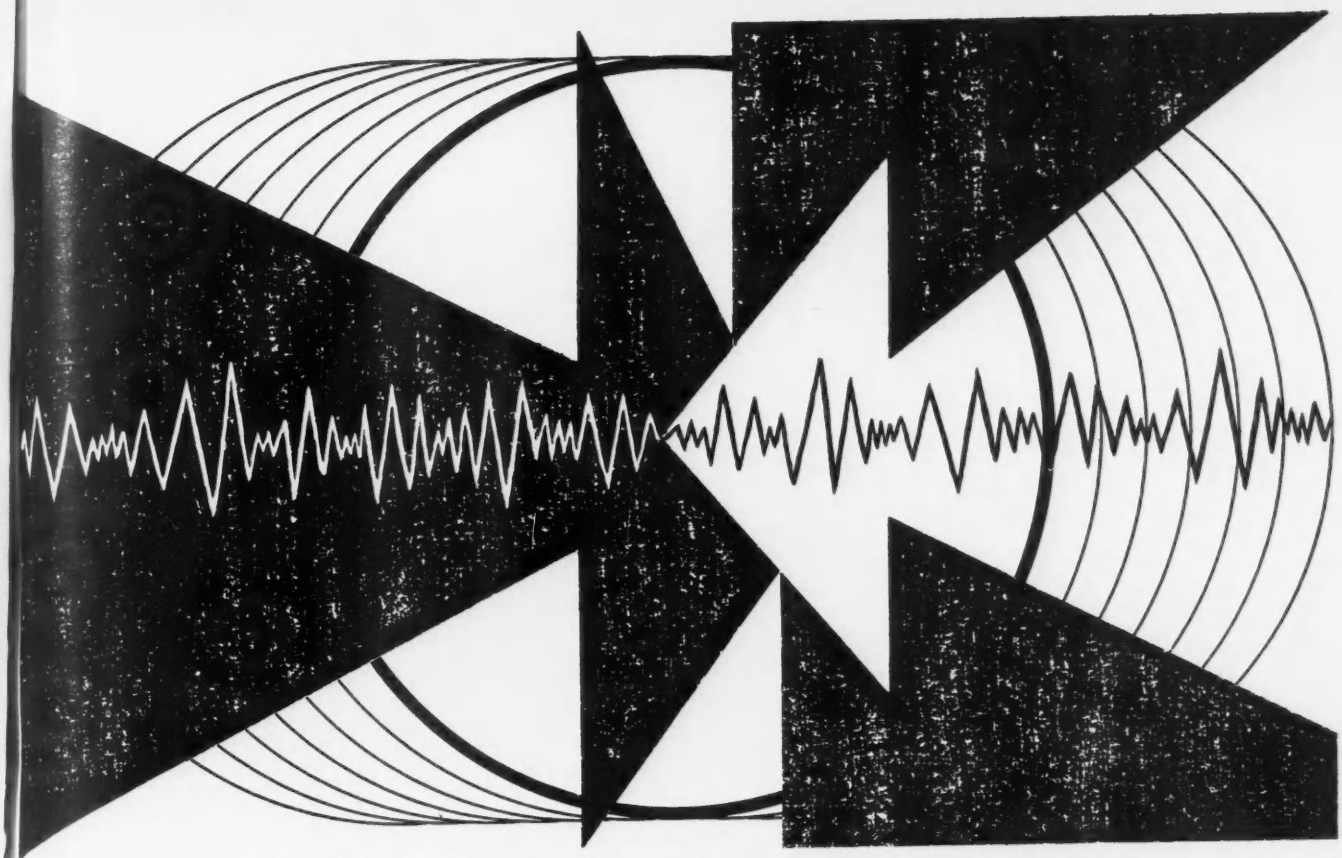
PROTECTIVE EQUIP.

PROTECTIVE EQUIPMENT — Reliable Electric Company, 11333 Addison St., Franklin Park, Ill.

TELEPHONE EQUIPMENT

2000 Lbs. Capacity trailer. For ALL materials including pay out take up cable, line wire and drop wire. Priced RIGHT Write for Illustrated literature NOW TODAY

WHITAKER REEL MFG, CO.
P. O. Box 1318 Monroe, Louisiana



RCA NEW YORK CITY

Communications Systems Laboratory has outstanding professional opportunities for SENIOR COMMUNICATIONS SYSTEMS ENGINEERS

Located in lower Manhattan, this RCA laboratory has several key positions for senior communications systems engineers interested in unusual opportunities to develop new concepts and techniques for long-term military communications systems programs.

Successful candidates for these outstanding career opportunities will have from five to ten years experience in the communications engineering field. A working knowledge of the application of operations analysis to communications systems, laboratory and computer systems simulation techniques, and network synthesis and analysis methods is required. Experience in the field of digital transmission techniques will be helpful, in addition to a knowledge of the operational aspects of military or commercial communications systems.

Duties and responsibilities will include coordination of subsystem design directed toward optimum over-all systems capabilities, including the technical, economic and logistic details.

If you are a senior communications engineer who values a highly creative professional atmosphere, and will enjoy working individually or in small groups in RCA's continual search for technological improvements that will advance the state of the communications art, this is a career opportunity you should investigate immediately.

For an interview in New York City, call:

Mr. Kenneth R. Ryman at WAlker 5-3716

Positions also available in Camden, New Jersey, and Tucson, Arizona.

Or send resume to:
Mr. Kenneth R. Ryman, Dept. W-75
RCA Communications Systems Laboratory
75 Varick Street
New York 13, N. Y.

RCA ® ***RADIO CORPORATION OF AMERICA***
Defense Electronic Products

EQUAL JOB OPPORTUNITY For All Qualified Applicants

DIRECTORY SERVICES

EVERY MONTH

More and More Telephone Companies use DIRECTORIES produced by

Your Inquiry Respectfully Solicited

LELAND MAST DIRECTORY COMPANY

1619 GREENWOOD WILMETTE, ILL.

ADVERTISING, DIRECTORIES—General Telephone Directory Co., 1800 Oakton Street, Des Plaines, Ill.

PROFESSIONAL SERVICES

INSPECTION SERVICE
"AT TIMBER TREATING PLANTS"
Of poles, crossarms, and preservative treatments. Analysis of wood preservatives
Consultation and specification writing
A. W. WILLIAMS INSPECTION CO., INC.
MOBILE, ALABAMA
New York St. Louis Portland
Inspectors stationed throughout the U.S.A.

MURPHY ELECTRONIC RESEARCH DEVELOPMENT ENGINEERING LABORATORIES, Inc. MANUFACTURE
4419 TULSA
HOUSTON 24, TEXAS
Write For FREE Literature

McGRATH ENGINEERING, INC.
Consulting Engineers
209 West 6th Street
TOPEKA, KANSAS
Telephone CEntral 2-2358

CARL C. CRANE, INC.
Consulting Engineers
121 S. Pinckney Street, Madison 1, Wisc.
Telephone ALpine 6-0247

PROFESSIONAL SERVICES

ALLEN K. HAMILTON ASSOCIATES, INC.
CONSULTANTS - SYSTEMS ENGINEERS
GENERAL ENGINEERS
WOODSTOCK, ILLINOIS TELEPHONE FEderal 8-2400

Davis Construction Co. UTILITY PLANT CONSTRUCTION
45 North Clark Street • Sullivan, Missouri

HENRY J. SVIKA, P. E.
Consulting Engineer
Public Utilities Accountant
P. O. Box 1334, Tallahassee, Fla.
Plant, Traffic, and Commercial Engineering — Appraisals, Cost, Management, and Rate Studies — Electric, Gas, Telephone and Water Utilities.

C. D. EHINGER, P. E.
Consulting Engineer
Telephone Utilities
Mail Address:
639W. Madison
Decatur, Indiana

HARRIS-McBURNEY CO.
PUBLIC UTILITY CONSTRUCTION
A complete construction service for the telephone industry
Construction Crews Designing
Station Installers Appraisals & Reports
Cable Splicers C. O. Installation
Underground Duct Systems
Telephone ST 4-6126
P. O. Box 267 Jackson, Michigan

PROFESSIONAL SERVICES

PROFESSIONAL ENGINEERING AND CONSTRUCTION SERVICES
Plant Construction Crews • Installer Repairmen
Cable Splicers

CENTRAL OFFICE INSTALLATION
Complete central office routines, tests & adjustments, carrier installations, tests & alignments, key system installations

HENKELS & McCOY
PHILADELPHIA
1800 Johnson St. Elkhart, Ind. COngress 4-1121
Altanta, Ga. TR 5-2769 St. Johns, Mich. 966
Ashland, Ohio 3-7543 St. James, Mich. 492
Bloomington, Ill. 5-7717 Durham, N.C. 7-1316
Lebanon, Ky. 660 Wausau, Wis. 2-2356
Victorville, Calif. 5-9012
PERFORMANCE Has Built Our Business

TWIST CLAMPS

KANT TWIST CLAMPS
HAND CLAMPS — FIXTURE CLAMPS
Write for Literature
SAXTON MANUFACTURING CORP.
1517 N. Potrero Ave., So. El Monte, Calif.

Whether a Winch Line Hook or a complete Line Body check your requirements with

UTILITY TOOL & BODY CO.
CLINTONVILLE, WISCONSIN

UT&BCo

LINE CONSTRUCTION • CABLE SPLICING
CENTRAL OFFICE INSTALLATION
STATION INSTALLATION • PLANT ENGINEERING

We will be staying at the Conrad Hilton Hotel during the Convention. Our exhibit room will be 657A.

HENKELS & McCOY

6100 N. 20th Street
Philadelphia 38, Pa.

1800 Johnson Street
Elkhart, Indiana

Lebanon, Ky. Harrison, Pa. Ashland, Ohio Los Angeles, Calif.
St. Johns, Mich. Wausau, Wisc. Durham, N. C. Bloomington, Ill.
Atlanta, Ga. St. James, Minn.

Performance has built our business

ADVERTISERS' INDEX

Acme Visible Records, Inc. 37
Airtronics International Corp. 69
Advanced Communications Engrg. 140, 142
Alphaduct Wire & Cable Co. 92
Altec Lansing Corp. 79
Aluminum Co. of America 84-85
American Chain & Cable Co. (Wright Hoist Div.) 87
American Tel. & Tel. Co. 60-61
Anson, Inc., Art. 126
Anaconda Wire & Cable Co. 66-67
Association of Communications Engrs. 110
Automatic Electric Co. 72-76, 97, 100-101

Bartlett Mfg. Co. 91
Bashlin Co., W. M. 142
Benner-Nawman, Inc. 16
Berry & Co., L. M. 17-19
Bohnsack Equipment Co. 123
Brand-Rex Division 31
Buckeye Telephone & Supply Co. 87, 140
Budelman Electronics Corp. 91, 138
Burgess-Manning Co. 87
Butler Mfg. Co. 96

C & S Products Co. 10
Cable Spinning Equipment Co. 103
California Water & Tel. Co. 83
Central Tel. Co. 14
Collins Radio Co. 58
Commercial Cord Co., Inc. 142, 145
Communication Equipment & Engrg. Co. 133
Comptometer Corp. 38-39
Cook Electric Co. 111
Copperweld Steel Co. 104-105
Crane, Inc., Carl C. 144

Dahl Co., George W. 136
Davis Construction Co. 144
Donnelly & Sons, R. R. 79

Ehinger, C. D. 144
Engineering & Electronic Devices, Inc. 138
Erico Products 99

Gabriel Electronics 119
Gagne Enterprises, Inc. 118
General Electric Co. 29
General Insulated Wire Works, Inc. 118
General Machine Products Co. 106
General Purpose Mach. & Equip. Co. 142
General Telephone Directory Co. 2, 144
Gladwin Plastics, Inc. 113
Globe Electronics 117
Graybar Electric Co. 12

Hallamore Electronics Co. 8
Hamilton Associates, Inc., Allen K. 144
Harris-McBurney Co. 144
Henkels & McCoy 144
Highway Trailer Co. 142
Holan Corp. 40
Hughey & Phillips, Inc. 98

ITT Kellogg 26-27, 34-35
Independent Tel. Pioneer Assoc. 77
Independent Tel. Repair Co. 140
Indiana Steel & Wire Co., Inc. 137
International Teletronics, Inc. 9

Kearney Corp. 146
Klein & Son's, Mathias 102
Koppers Co., Inc. 142

Leich Sales Corp. 120,-121
Lindsay Telephone Supply Co. 127
Lorain Products Corp. 15

Mast Directory Co., Leland 144
Mathews Co. 142
McCabe-Powers Body Co. 93
McGrath Engineering Co. 144
Morrison-Pelsue Co. 106
Mosler Dropostory Corp. 70
Motorola, Inc. 124-125
Murphy Engrg. Laboratories, Inc. 144

National Telephone Supply Co. ..... Back Cover
Neuses, Inc., P. K. 87
North American Phillips, Inc. 30
North Electric Co. 24-25
Northeast Electronics Corp. 134

Okonite Co., The 117

Page & Hill, Inc. 126
Panhandle Electric Sales, Inc. 107
Phelps Dodge Copper Products Corp. 11
Piedmont Wood Preserving Co. 142
Preformed Line Products Co. 130-131
Pressed & Welded Steel Products Co., Inc. 41
Puregas Equipment Corp. 21

RCA 143
Railway Communications, Inc. 28
Ramset Fastening System 116
Reliable Electric Co. 22-23, 142
Reynolds Metals Co. 88-89
Ryan Manufacturing Co., Inc., F. B. 132

S & G Manufacturing Corp. 103
Saxton Mfg. Corp. 142, 144
Seymour Smith & Son, Inc. 108
Sherron Metallic Corp. 13, 142
Southwestern States Telephone Co. 83
Stromberg-Carlson 32-33, 81
Superior Cable Corp. 4-5
Svika, Henry J., P. E. 144

Taylor-Colquitt Co. 127, 142
Telectric Co. 141
Tele-Norm Corp. 28
Tele-Wire Supply Co., Inc. 79
Telephone Engr. Mgmt. 114-115
Telephone Repair & Supply Co. 95, 142
Texas Creosoting Co. 142
Thornhill Publishing Co. 112
Truck Equipment Co. 122

U. S. Instrument Corp. 36
U. S. Steel Corp. 71
United Utilities, Inc. 20
Utility Tool & Body Co. 144

Vermeer Mfg. Co., Inc. 128
Victory Engineering Corp. 109

Warren Mfg. Co., Inc. ..... Inside Back Cover
Watkins Co. 142
West Coast Telephone Co. 83
Whitaker Reel Mfg. 142
Whitney Blake Co. 6-7, 135, 139
Williams Inspection Co., Inc., A. W. 144
Winders & Geist, Inc. 123
Wyoming Valley Equipment Div. 112, 142

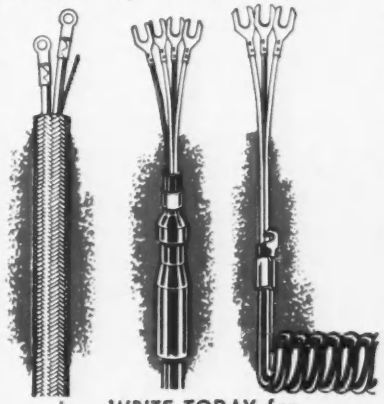
Don't worry Henry...
COMCO CORDS
NEVER LET YOU DOWN!

...and that's no joke where phone cord serviceability is concerned

Whether it is a handset, deskstand, switchboard, or inter-communication system cord, COMCO quality guarantees top year-in, year-out performance. From rugged Spiraflex Retractile cords in standard or extended lengths (10, 15 or 25 ft.) with black or colored P.V.C. jackets, to durable Nylon jacketed Operator cords, in black or brown, each COMCO Cord boasts built-in reliability to eliminate service worries. Moreover, all standard cords are in stock, ready for rapid delivery on your order!

Special cords a COMCO specialty, too!

Patch cords, transmitter cords, test and inter-communication cords are all quickly available from COMCO, and cords made to your exact specifications require little more than an immediate delivery schedule. Determining the exact time required for delivery of your problem cord takes only a call to COMCO. Why not make it today?



WRITE TODAY for Catalogs, Samples and Prices

COMCO
COMMERCIAL CORD COMPANY, INC.
CLIFTON SPRINGS, N. Y. • HOward 2-2311
Distributed by: LEICH SALES CORP.
427 W. Randolph St., Chicago 6, Illinois
AUTOMATIC ELECTRIC SALES CORP.
Northlake, Ill.

Loosen "Frozen" Pole Line Hardware in seconds

KEARNEY
Rust Cutter

Fast... New fast acting chemical compound loosens corroded ferrous nuts, bolts, studs in seconds. Eliminates sawing, speeds your pole line repairs.

Easy... Lightweight push-button can makes Kearney Rust Cutter easy to use on ground or poles. Atomized mist dissolves crystallized rust.

Safe... New Kearney Rust Cutter is completely safe . . . harmless to skin.

JAMES R. KEARNEY CORPORATION
4224-42 Clayton Avenue • St. Louis 10, Missouri
Canadian Plant: Guelph, Ontario

For BETTER CONSTRUCTION—SAFER MAINTENANCE
Specify
KEARNEY
Products

386

THE BACK OF THE BOOK

By JOHN G. REYNOLDS

Poolside Outlook For Executives

WANT to spend the afternoon beside a pool and keep your business going too? It soon may be possible.

The Illinois Bell Telephone Co. has requested Illinois Commerce Commission permission to try out installations which permit a person away from the office to dictate letters or anything else into a recording device at the office.

The device will accept dictation from anywhere in the world there is a phone, including an auto or boat.

No beeping sound will interrupt because the conversation will be one way, to a number not in the phone book. A monitor phone in the office can be had if desired. Anything said into it will not be recorded.

Why Are The Pages Yellow?

"WHY ARE the Yellow Pages yellow?

"Why aren't they purple, pink, or blue?" perkily chants Ohio Bell Directory Department's new singing commercial, now to be heard dozens of times a week on radio stations in Cleveland, Columbus, Dayton, Toledo, Steubenville, and Youngstown.

"Well, why are the Yellow Pages yellow?" irately demanded a U. S. Army major of Directory Supervisor of Sales Promotion Leo Dunn after hearing the new radio ad.

Leo had to confess that even he, loyal Yellow Pages man that he is, didn't really know.

But his curiosity was piqued — piqued to the point that he called A.T. & T. Some Directory department veterans there recalled that 30 or 40 years ago both alpha and classified pages were white, and almost all phone directories — smaller in those days — were combined in one cover.

It was a visual problem to quickly distinguish alpha from classified.

Some now-forgotten genius solved the problem by pointing out that if the classified section were printed on colored stock, it could be quickly identified.

But what color, so as to be easily readable by users?

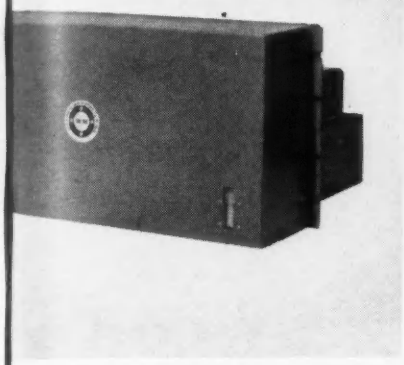
A New York City eye specialist was consulted.

He researched the question, and reported that the most legible combination was black print on white stock — which we were already using, and continue to use in the alpha section.

Second most legible combination, the doctor declared, was black print on pastel paper — and the most readable was pale yellow. Therefore: The Yellow Pages!

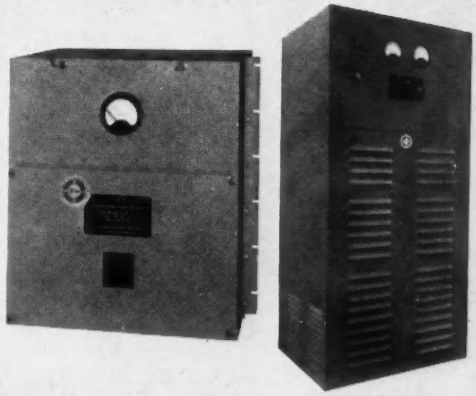
An international note: The classified pages of most telephone directories in South America, Japan, and Korea are yellow, too. Those of many other countries are white. The classified pages of the Paris telephone directory are — predictably — pink!

WARREN — FIRST IN TRANSISTOR PRODUCTS FOR THE TELEPHONE INDUSTRY



R-Transistor Ringing Generators-(25 & 50 Watt)

's are battery powered, multi-frequency, all-transistor erators. They provide stable, continuous, on-frequency any 5-frequency combination. They are dependable, act, and highly efficient. With automatic self-protection or fuse protection ("B" model).

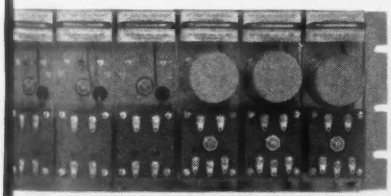


Type TFR — Transistor Float Rectifiers

Warren TFR's (Transistor Float Rectifiers) are available in both single phase and 3-phase models. They are solid state, constant voltage, fully automatic battery chargers, employing silicon rectifiers with transistorized magnetic amplifier control circuit to obtain line load regulation of ½% from 0 load to 125% load. No moving parts, no aging adjustments required. Designed for 30-year life. Compactness saves space, efficient design saves money in power consumption costs. Ratings: 3 amps. to 800 amps. 24 volts; 1.5 amps. to 400 amps. 48 volts; .5 amps. to 60 amps. 130 volts. For more capacity in smaller space, "Two-High" models (up to 200 amps) are available — two TFR's arranged to operate either singly or in parallel on a fully automatic basis.

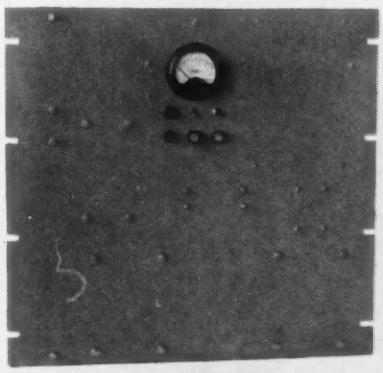
Type TRT — Transistor Ring Talk Power Supplies

Warren TRT power supplies are intended for use with key systems, wiring plans and small PBX installations. Reliable, non-aging silicon rectifiers in the talking circuit, and a transistor ringing generator as the source of 20 or 30 cycle ringing, assure high efficiency, long life. Maximum power and ringing capacity in smallest amount of space.



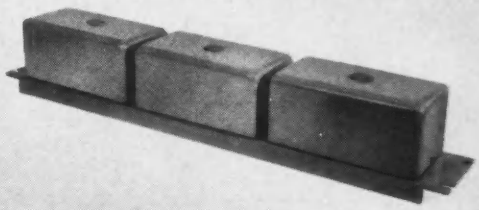
r Tone Link Equipment

sistor Tone Link Equipment provides for simultaneous of up to 26 AC tones to link control devices in tele-stems. Reduces number of wire facilities required be-devices in telemetering systems. 100% transistorized erating and maintenance costs.



Type TPP — Transistor Power Packs

Complete, self-contained, transistorized power package for PBX or PABX installations, includes battery eliminator (or charger) ringing generator, and tone generator. Available in ratings from 3 to 40 amps., 24 V., and 1.5 to 24 amps. 48 V.



Type TTG — Transistor Tone Generators

Three D.C. operated generators now available: TTG-DT 600 cycles modulated at 120 cycles for Dial Tone; TTG-RT 400 cycles modulated at 40 cycles for Ring Tone; TTG-LT, 500 cycles for Low Tone.

SEE US AT THE CONVENTION,
Room 637, Conrad Hilton,
Oct. 9-12, Chicago

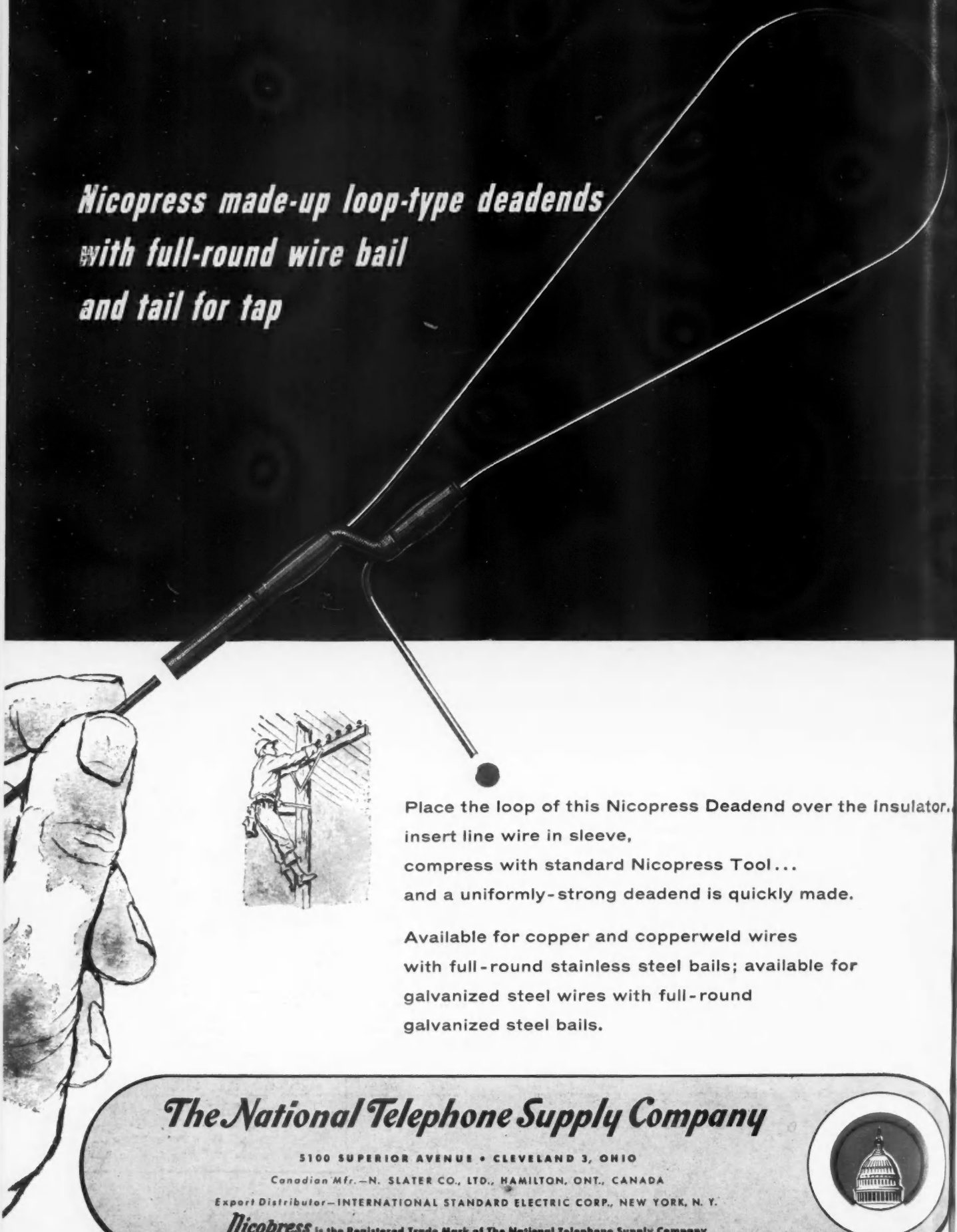
WRITE TODAY FOR COMPLETE INFORMATION.

THE WARREN MFG. COMPANY, INC.

Littleton, Massachusetts. Tel. HU 6-3511

FIRST IN TRANSISTOR PRODUCTS FOR THE TELEPHONE INDUSTRY — SOLD THROUGH LEADING TELEPHONE EQUIPMENT MANUFACTURERS

Nicopress made-up loop-type deadends with full-round wire bail and tail for tap



Place the loop of this Nicopress Deadend over the insulator, insert line wire in sleeve, compress with standard Nicopress Tool... and a uniformly-strong deadend is quickly made.

Available for copper and copperweld wires with full-round stainless steel bails; available for galvanized steel wires with full-round galvanized steel bails.

The National Telephone Supply Company

5100 SUPERIOR AVENUE • CLEVELAND 3, OHIO

Canadian Mfr.—N. SLATER CO., LTD., HAMILTON, ONT., CANADA

Export Distributor—INTERNATIONAL STANDARD ELECTRIC CORP., NEW YORK, N. Y.

Nicopress is the Registered Trade Mark of The National Telephone Supply Company